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PURPOSE IN EVOLUTION

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AGE after age, and often from the depths of human nature, the question has arisen whether there is some transcendental Purpose in the making of the world. Is there some recondite meaning in it all, and if so, can we get any glimpse of what it is? More especially, is it legitimate to say that Nature is Nature for a Purpose? Was there a Purpose, or something dimly analogous to a Purpose, in the origination of the process of Evolution? Is Evolution permeated by or immediately controlled by Purpose? Or does it simply express a purpose which determined its direction from the first? We know a little about the tactics of Evolution, but is there a strategy? If not, why are we always groping after it?

It is evident enough that Science as such never asks whether there is a purpose in Evolution. That is not its métier, nor is the question answerable by its methods. The question is philosophical or religious. Science asks What, whence, how, and whither, but never the deeper "Why?" Yet it is possible that Science may make contributions which help us towards a synoptic or philosophical answer, if we are inclined to the search.

But while Science does not inquire into ultimate Purpose, it is perhaps useful to delay a little to notice that the general idea of purpose is legitimate in scientific inquiry, and cannot be dispensed with. We may avoid the word, but we cannot do without the idea. I shall be content with one illustration—from Ecology, where the issue is clearest.

Purpose as a Factor in Everyday Life

Of many a human day's work it is impossible to give a scientific description without taking account of the man's purpose. There is a forward looking, often warmed with emotion, that leads him to adjust his actions towards an end in the future. The purpose is a *vera causa* with hands and feet. An omniscient chemist might make a ledger of all the oxidations and reductions, hydrations and dehydrations, fermentations, and adsorptions that bring a lecturer to a particular platform; and an omniscient physiologist might tell of all the nerve-impulses and muscle-contractions, sensory stimuli and conditioned reflexes, and so on and so forth, that were concerned in the translocation; yet, after all, the appearance of the lecturer cannot be accounted for unless his purpose be recognized. In many human activities there is actually operative purpose—often conceptual, sometimes perceptual, often habitual, sometimes only a flash; but some sort of purpose there is.

Similarly with many activities among higher animals, we cannot make sense of them scientifically unless we admit an operative perceptual purpose. Even though it be only a mental picture coloured by desire, it counts. The chimpanzee whittles a stick with its teeth till it is slender enough to fit into the hollow of a bamboo rod, making out of two sticks one long enough to reach the desired fruit outside the cage. A dog goes off for a mile along the highway to reach a spot where it was baulked of a rabbit yesterday. The beavers spend weeks of co-operative industry in cutting a canal which is of little use until it is finished. Among higher animals there is perceptual purpose, and it counts. There is purposeful behaviour, comparable to our own, though much simpler.

When we pass to predominantly instinctive animals, our description becomes less convincing, but that is partly because we have not as yet enough of information, though partly because man finds instinct foreign to his experience. Some worker-bees resting in the hive are roused by the nectar dance in which a successful incomer indulges on the honeycomb; they crowd around her, get the olfactory clue of, say, clover, and off they go on the search. Some tailor-ants take their grubs in their mouths and dab them like animated gum-bottles against leaves held close together, so that these are firmly fastened with the silken threads which the larvæ produce. A Queensland spider hangs itself on a thread from a twig, and makes a short lasso with a viscid globule at the end, which it throws dexterously on a passing moth, afterwards drawn in and sucked. There are hundreds of such cases, requiring, of course, very careful discussion, but my point at present is simply that they are more than suggestive of a low grade of half-automatized purposiveness. The terminology will

come right by and by, but is there not in many cases, until the automatization goes very far, something of the nature of a consciously bent bow of endeavour, some instinctive purposiveness, though we may not dare say purposefulness. Even when the racial automatization has gone very far, as it often does, we must not forget the long period during which the creature was testing its inborn inspirations, and playing its hand of hereditary cards. May we not say that there is a good case for believing in instinctive purposiveness?

Some of my biological friends, for whose investigations I have due respect, even when I think their conclusions are erroneous, maintain that the word purpose does not belong to the scientific dictionary. I agree as regards transcendent purpose, which is obviously beyond Science, but I profoundly disagree as regards great stretches of animal behaviour, of which I cannot make sense without the hypothesis that some subjective or psychical activity, analogous to our purposing, operates as a real factor. If this be granted for higher animals, the difficulty is to know where to stop; and here one should be patient. What is one to make of an individual starfish that tackles a small sea-urchin with one arm after another, and disarms it by wrenching off the snapping-blades or pedicellariæ, the result being that the aggressor can protrude its elastic stomach over its victim. And yet the starfish has not a single nerve-centre in its body, only strands and networks of nerve-cells. Purposeful, no; purposive, yes.

Passing to still simpler organisms, we need the concept of purpose less; but can we do without it altogether? Take the careful account Jennings gives of an amœba pursuing a smaller amœba, overtaking it, engulfing it, losing it, turning on its course, capturing it again, losing it again—and there the story stops. We must be careful, Spinoza said, not to be too sure of what the body as body may not do; and most of us shrink from giving the tendril-bearing Bryony or the insect-catching Fly-trap credit for "purpose" even in inverted commas. On the other hand, there is much to be said for a temperate pan-psychism. If we were on the mud of the pond and minified a thousand times, while an amœba magnified a thousand times drew near with its eerie tank-like movement, it is not likely that we should act on the hypothesis that it had no purpose.

Thus we reach the idea, obvious but often ignored, that insurgent organisms share in their own evolution, not in the sense of working towards a racial ideal, for man alone is fit for that, but in the sense of endeavouring to make the most of things and to express themselves in obedience to the universal urge of life—*the urge for more*, more food, more room, more light, more love, more life. Life in evolution is interpenetrated with Purpose!

The Teleological Idea in Physiology and Embryology

So far, then, I have ventured without argument to state the impression left by many happy years as a field-naturalist, that the concept of immediately operative purpose is indispensable. It is often conceptual purpose in man, perceptual in higher animals; it may be instinctive or merely organismal purposiveness; but some sort of purposing there is.

Now before we pass to our larger theme it may be useful to indicate that it is very difficult in physiology and in embryology to dispense with some form of the teleological idea. That is to say, the description is inadequate without reference to an end or outcome.

Turn for a minute or two, and very simply, to physiology. On a holiday we watch a crofter cultivating his fields and perhaps gathering a sparse harvest from the sea. What he does is self-contained and reasonable in itself. But on our way home we watch a busy operator in a shunting-room, doing nothing hour after hour but attending to signals and pulling levers. His activities are not intelligible except as part of an organization, and as making towards certain results, not always very immediate. So in some simple animals and simple corners of animals we may study activities, self-contained and self-justifying like the crofter's, but most animal activities are incomprehensible except as contributory to the whole life of the integrate of which they form a part. Physiology requires to be teleological in this wide sense, that the working of the parts, like those of a machine, cannot be understood unless they are considered in relation to one another and in relation to the whole. This is soon supplemented by dynamical or chemico-physical, or by distinctively physiological formulations; and it may be that the story is not completed without recognizing psychical factors as well—the *esprit de corps*. How many kinds of formulations are necessary is a question for discussion—one, two, or three—but my present point is that the physiologist, even if mechanist, must start with recognizing the organism as teleological.

Another study in which the teleological idea seems indispensable, not as an operative factor, but as part of the story, is development. One can never forget watching the development of a translucent embryo, witnessing in the course of a day a long series of movements and differentiations. One focusses on the problem all one knows—about cell-divisions, laws of cell-arrangement, mutual pressures, metabolic gradients, liberations of the latent action of regulators and organizers; one thinks of the egg-cell rich in initiatives dating from a distant past, and one works with the idea of a succession of liberating stimuli from within and from without, and so on and so forth. But can we leave out of our description the fact that the

development looks *as if it were* purposive, as when it moves circuitously towards a result, or when it builds up an organ only to break it down again, or when it stops, de-differentiates, and begins again. Without raising the question whether there is not always a psycho-biosis as well as a bio-psychosis, we are simply asking the embryologist whether he can dispense with teleological description. It was von Baer who said: "the whole course of development is nevertheless ruled and guided by the essential nature of the future organism"—a fact, he added, which may be demonstrated by observation. Those who are fond of the risky machine analogy in physiology must admit that it does not become easier in embryology, for the embryo-machine makes itself as it goes on, often takes itself in part or whole to bits and begins again, and often lays down before it finishes with itself a stock of little machines for the next season's sales.

Adaptations

Romanes, who was a shrewd naturalist, once said that "wherever you tap Organic Nature it seems to flow with purpose." As he was a sound Darwinian, it is likely that he mentally italicized "*seems to*"; but he was alluding to a fact—the abundance of adaptations in organisms. As Weismann said, When you take away all the adaptations from a whale, there is not much left. All complex organisms are bundles of fitnesses, and it is worth re-reading Darwin's account of the numerous mutual adaptations of bee and orchis, partly to realize afresh what an eloquent fact adaptation is, and partly to notice that Darwin found it a little difficult not to talk like Paley. From the widespread fitnesses and their extraordinary nicety, Paley inferred the direct action of a Divine Artificer—an uncouthly materialistic picture. But the edge was taken off Paley's argument when Darwin showed that it was possible, in terms of variability, heredity, and selection, to give a naturalistic account of the way in which the orchis and the bee had come to be so well suited to one another. It remains possible, however, to think of a Creative Purpose that so endowed the primitive irreducibles that they included for all their descendants the capacity of evolving fitnesses. This wider concept of Creative Design is expressed in the words that Charles Kingsley put into Dame Nature's mouth, as she sat so puzzlingly at leisure: "You see I make things make themselves." Thus did the genius of the Creator save the evolving world from the shackles of determinism, and yet secure the climax in the first act of the drama.

Those who point out that the thousand and one adaptations are marvellous, and cannot have arisen by chance, are repeating Darwin's own words; but to use the word "chance" nowadays in its popular sense in this connection is a verbal fallacy. There is very little

fortuity in variation, and almost none in Natural Selection, which sifts those saying Shibboleth from those saying Sibboleth.

Does Organic Evolution Express a Purpose?

We turn now to the philosophical question—if we only knew how to put it—Are there aspects of evolution that suggest an initial purpose? Has the whole been thought out and endowed in reference to an end? Is evolution the realization of a Creator's thought, or will, or imagination, or purpose? Of course, all our words are necessarily but adumbrations when we are thinking of "the mind that was in the beginning, without which there was nothing made that was made." Not absolutely beyond us, however, for that mind "was life, and the life was the light of men."

It does not seem to be even thinkable to try to *prove* scientifically that there must have been a plan in the Institution of the Order of Nature. That would be the fallacy of transcendent inference, with a conclusion far too big for the premisses; and in any case, it is not what Science is after. My mood is to be more patient and to care little what words are used so long as we do not lose the Open Secret that there is behind all Evolution a Supreme Reality, of whose Spirit it is an expression. Un dieu défini, c'est un dieu fini—like the Divine Artificer. But age after age Science has helped man to a finer vision of Him in whom we live and move and have our being; and Science with its newest and grandest world may be able to help us even now with contributions of fact and formulation towards the answering of our philosophical or religious question: *Is there a Purpose in Evolution?*

Science submits numerous data which are eloquent when considered together. Attention has often been drawn to the orderliness of Nature, that we live in a Cosmos. The concept of "a fortuitous concourse of atoms" has been given burial at last. The fortuitous dwindles as Science grows. Yet while you admire the orderliness of Nature, it may be asked whether there could ever have been disorder in anything that lasted. So perhaps a better way of stating what is rather a consideration than an argument is just that Nature becomes increasingly intelligible, making scientific description more and more possible, extensively and intensively; and the fact of Science—of Science that would not have been if the Earth had been beclouded—is difficult to think round without assuming that in the beginning was Mind. As Aristotle used to say, there can be nothing in the end of a process which was not also present in kind in the beginning.

To much of the orderliness of Nature, what can we say except that the order is what must be. Similarly I am a little afraid of enthu-

siastic arguments, including my own, from the practical omnipresence of beauty in Animate Nature. This is a big fact, but in the majority of cases, the beauty, defined as that which evokes the æsthetic emotion, has an *inevitable* objective basis. There is no alternative in many cases, for the beauty depends on the ripple-marks of orderly growth, or the by-products of orderly metabolism, or the outcome of strenuous eurhythmic movement. The larger fact to my mind is that the process of organic evolution should have been such that it evolved with singular patience, so to speak, a type of being who found in the qualities of natural objects, not only a delight, but an inspiration.

What often happens is that the beauty of living things becomes meat and drink to us. It sometimes fills our cup so generously that, straining at the end of our emotional reach, we become religious, overwhelmed by the sacredness of the testament of beauty. The beauty of the world, especially of Animate Nature, is included in the well-thought-out plan; but we see this most clearly after we have drawn the conclusion to which it points. When we impatiently seize upon some puzzling conclusion of our temporary balance-sheets, *e.g.* that all the physical universe is like a clock running down, which would be more dispiriting if it were less leisurely, we are probably suffering, oftener than not, from insufficient data. As an authority, unembarrassed by opinion, said the other day, "Gain of entropy always means loss of information and nothing more."

We have to face a practical dilemma. On the one hand there is the risk of shutting our eyes to obvious rays of light, like orderliness and beauty, and on the other there is the risk of trying to press too big a conclusion out of the premisses. The order of Nature is doubtless greater than our greatest thought of it, yet there follows too facilely the mis-inference that it is all being purposefully kept in order now. The Divine Artificer has been exchanged for a Divine Bureaucrat. The beauty of Nature is greater than we have yet discovered, yet there follows too facilely the mis-inference that the Creator paints the lily and adorns the rose. The Divine Artificer has been exchanged for a Divine Decorator. This won't do, for our vision of God, which Science has its share in refining, cannot be out of harmony with a naturalistic description of the world, that is to say with describing outcomes as the natural and necessary resultants, emergents if you like, of the verifiable operative factors resident in the material. It seems to me inconceivable that Science should ever go back from this ideal of naturalistic description; but that does not in the least imply that we need refrain from idealistic, transcendental, mystical, or religious *interpretation*—the only kind of interpretation there is.

We turn now, beyond orderliness and beauty, to some other

aspects of Evolution which suggest a Purpose in the unthinkable Beginning.

The Uniqueness of the Earth

I am not competent to grapple with the thought that flits through our minds that our earth is extraordinarily unique. We are not sure that there is any place except the earth where there could be protoplasmic forms of life such as we know, and we need not delay over hypothetical forms of life which we cannot imagine. All the organisms we know require water in fluid form, and that restricts life to a narrow range of low temperature. Nine-tenths of the matter in the universe is at temperatures in comparison with which 1000° C. would be relatively cool. We do not know of many planets altogether, though there may be more than we know of; and while it is indeed difficult to believe that conscious life is restricted to the earth, we do not know of any other possible homes, unless Venus and Mars are possible.

Preparations in the Inorganic World

Preparation for prospective results is not a scientific concept, except in the doings of organisms, intelligent animals in particular, as when marmots store for the winter. Yet Professor L. J. Henderson in his *Fitness of the Environment* has indicated many features in the Inorganic World which look like preparations for organisms. At a certain time there came to be—given the antecedents there had to be—abundant supplies of carbon, hydrogen, and oxygen near the surface of the earth, and these are the fittest elements for originating diverse and durable chemical systems, including organisms. At a certain time there came to be—given the antecedents there had to be—a meteorological cycle of water, and in half a dozen ways this opened the doors to life.

We must recall the fallacy of inferring Providence from the thoughtful way in which great rivers flow past large towns; and it has been said that if there had not been abundant availability of carbon, hydrogen, and oxygen, and of liquid water, there might have been alternative organisms well prepared for by alternative environments. But we cannot imagine any alternative forms of life. So we may agree with Henderson that the primeval environment is "only fully intelligible, even when mechanically explained, as a preparation for the evolutionary process"—as, in short, teleological.

Preparations in Organic Evolution

I have admitted that the idea of "preparation" is not scientific except when we are dealing with cases like a bird preparing a nest

or a meal. Yet there is much in Organic Evolution that suggests pre-arrangements making subsequent steps of progress secure. It is salutary to be again reminded of the noble rivers running past the big towns, but there is more in it than that. The green plants make the breathable air; they make food enough to support themselves and the animal world; the continuance of life is almost unthinkable without bacteria; the welter of Plankton organisms makes fishes possible and fishermen too; perhaps the emergence of Amphibians, leading on to higher forms, was made possible by an almost unique property of water, that of having its maximum density a little above the freezing-point; and so on at length.

We are not saying that Plankton organisms evolved in order that there might be a Billingsgate; we are simply referring to the fact that the multitudinousness of the minute crustaceans in the sea, depending on the still greater multitudinousness of Infusorians and Diatoms, ensured the success of higher forms of life. Broad foundations were laid which made a lofty superstructure possible. There is a Systema Naturæ; and it looks as if the whole of Evolution had been well thought out, as we say fumblingly. In other words, we ask whether naturalistic description and teleological interpretation are not complementary ways of looking at Nature. No doubt, if the first floor of the great edifice grew from the ground floor, and if the ground floor grew out of the foundations, and if there are automatic ways of preventing the superstructure from becoming top-heavy, and so on, there is no need for an intervening master of works; but as we dwell on this evolutionary idea, we come to have a very high respect for the foundation-stones.

Circuitousness in Evolution

Those who are in a hurry have sometimes said that if the nisus or urge of Organic Evolution was initiated with a Purpose, oriented towards a distant goal, namely Man, it should have been more direct in its working-out, whereas it is remarkable in its circuitousness. Working towards an end! yet spending a million years in fashioning a feather; working towards an end! yet filling the stage for millions of years with types and even races that have left not more than fossils behind. Yet it may be that this was part of the fine strategy! Millions of years of tentatives, but the outcome a stable, reliable, balanced Systema Naturæ, a fulcrum on which Man can move the world. Struggles, and failures too, for millions of years, but with the result that the endeavour after well-being becomes a habit. Delays, eddies, retrogressions, blind alleys, and worse, yet evolution is on the whole integrative. Delay matters little if it meant that the door of choice was kept open. Though automatization is one of Nature's

methods, the process is more markedly a story of emancipations—as Lotze said, "an onward-advancing melody." Russell quotes from Von Baer's essay on "Nature's most general law in development and evolution," the conclusion that the ultimate law of all creative processes is "the progressive victory of spirit over matter." There must be, one cannot help thinking, some evolutionary urge or nisus, élan, or impulse, rather subtler than has been yet analysed into either mechanical or chemical or biological terms. I mean nothing mystical, but something more than tendencies to aggregate, to colloidify, to incorporate, to grow, to multiply, and so on, with all the involved catalysts, hormones, and organizers—I mean a psychical urge, the subjective side of endeavour. In any case, we see, with Emerson, the worm mounting through all the spires of form, striving to be man; and in man's nearer pedigree, through tentative men, beginning with the Chinese Sinanthropus, quaintly called the Man of Sin, we see a zigzagness as striking as the persistence.

Progressive Evolution

Evolution is sometimes backwards and sometimes in an eddy—neither suggestive of purpose. But on the whole, evolution discloses progressive differentiation and integration, the emergence of types with greater fullness and freedom, an increasing dominance of the mental aspect, a growing freedom of mind. There are successive syntheses that make things new—such as atom, molecule, micella, cell, multicellular organism, cerebrate animal, intelligent animal, man, society. There are successive emergences, as Lloyd Morgan calls them, more than merely additive resultants. There is what Smuts calls, not very euphoniously, a hierarchy of wholes. The larger steps, such as living organism, intelligent animal, rational man, human society, imply that the evolutionary urge takes a new form, it is raised to a higher power, and that we thus need new descriptive formulæ. Whenever, for instance, there is a genuine human society, a description in terms of individual units is inadequate; the social heritage *inter alia* has to be taken account of. So it is, we believe, with many of the larger steps in evolution. Even water changed the whole world. From the teleological point of view, then, evolution may be described as a series of progressive syntheses, which allow of novel expressions of the richness inherent in reality.

Conservatism in Evolution

Not to be overlooked, and with an interesting teleological suggestiveness, is what may be called the conservatism of evolution. We have just been speaking of new departures, but there is also a

tenacious holding fast of that which is good, even though the strands may enter into the fashioning of a quite novel fabric. Hæmoglobin, the valuable oxygen-capturing pigment of the blood, makes its first appearance in the Nemertines, unsegmented worms of low degree. Many higher animals are without it, but it was too good to lose; it is conserved along some lineage or other, till it comes to its own in Vertebrates. The two most important pigments are chlorophyll and hæmoglobin, the former doubtless with priority. Is it not significant that their molecules should show a remarkable resemblance in each having four pyrrol rings united by a single metallic atom, magnesium for chlorophyll, iron for hæmoglobin? The primitive mode of locomotion called amœboid appears very early; we see it still in our phagocytes, in many a young egg-cell, and in the growing end of a nerve-fibre as it feels its way out from the brain or spinal cord of the Vertebrate embryo. There is a remarkable conservation of gains; the entail is not readily broken. Man is not only the Crown of Creation, he is also in some ways its Epitome. He is musical—partly because amphibians croaked 300,000,000 years ago; he is a painter—partly because chamæleonic reptiles thrilled to colour; he is gentle —partly because mammals gave milk to their tender young.

We think of Evolution too unimaginatively. We do not, for instance, sufficiently realize the teleological interest of great trends that are, as it were, anticipatory of man's higher values—the true, the beautiful, and the good. For there are prolonged pre-human trends in favour of nimble wits, clear-headedness, and facing the facts; also trends in favour of beauty and its appreciation; also trends in favour of the primary virtues like courage and affection. T. H. Huxley notwithstanding, we discern a momentum in animal evolution which is in a line with man's most progressive movements. What hope there is for man in what Julian Huxley has told us of the way in which some bird-mates engender psychical attractions which raise physical fondness to affection, and last when the honeymoon is no more than a memory, if that.

Man—the Present Climax of Creation

What is at present the climax of evolution? Is it not represented by a civilized community of healthy-bodied, healthy-minded, kindly, good-looking people, with a noble social heritage which they use and enjoy, living industrious, prosperous, joyous lives, which are increasingly satisfactions in themselves, with a growing embodiment of the true, the beautiful, and the good, and with successors also healthy, wealthy, and wise? Can we say that the original purpose of the institution of the Order of Nature was to lead on to this and to what reasonably lies beyond? For there is no warrant for supposing

that Evolution will soon stop. Is the climax fine enough to give some confidence in answering the question, which many brush aside as unanswerable: Was there a purpose in Evolution? Charles Darwin thought so when he was writing the *Origin of Species*, when he said that he deserved to be called a theist; but gradually this conclusion weakened, and he said that he must be content to remain an Agnostic, deeply doubtful of man's ability to draw general conclusions on the subject. His cousin Francis Galton was almost equally immune to metaphysical speculation, but he seems to have believed in a recondite purpose in the Universe. As his biographer says: "Increased vigour of mind and body appeared to him the aim of the power which we seem to discern working obscurely, and as if with difficulty, behind the apparently blind forces of Nature."

The object of my discussion has been to ask whether this apparent blindness of Nature's workings in the realm of organisms is not largely a bogey. It is grotesque to call Organic Evolution "a chapter of accidents." The fortuitous has shrivelled before increased knowledge; there is much definiteness in organic variation; and Natural Selection is discriminate sifting in reference to an already established Systema Naturæ. We have also noted a number of features that are in harmony with the trans-scientific idea that the Order of Nature was originally endowed in a way that we should call in human affairs well thought out. There seems to be a steady, though inconceivably slow, advance of life from monad to man, and man—even now—is no anti-climax. Of course, one is thinking of man as a social being, man with his science and art, ethics and religion, all to be included as outcomes of the original institution of the Order of Nature, not of course in any wooden portmanteauish way, but in a way that secures organismal freedom in more or less degree throughout. And if man be pictured as one of the ends of the sublimely patient process, or as an instalment of one of the ends, an end that crowns the work, it is not illegitimate to look backwards, just as biologically minded Birds might on their Reptilian ancestors. The whole process of evolution has been such that it has had as its highest outcome a human society at its best. We have become accustomed to consider Man in the light of evolution, solidary with the rest of creation, but do we often enough try to envisage evolution in the light of Man—of Man at his best?

If, for various reasons which do not concern us just now, we are theists, we do not doubt the purposefulness of Evolution. That is part of what "believing in God" means. But our present study has kept to what is called the Natural Theology point of view, and our question has been: Is the idea of purpose congruent with the scientific facts? nay more: Do the scientific facts in any way suggest the interpretation that Nature expresses a purpose? Our

answer has been in the affirmative, and since the scientifically known system of Nature, being largely unconscious, cannot be credited with a purpose, we are led to think of a Creator's Purpose.

Soon, however, further difficulties arise. Has there been detailed guidance and control throughout? or was the whole outcome, including its freedom to evolve the new, implied in the unthinkable creative Origination of the Order of Nature?

The theory that there has been purposeful guidance throughout the ages has to face great difficulties. It suggests imperfections in the original irreducibles if subsequent spiritual influxes, as Alfred Russel Wallace called them, have been from time to time necessary to help things and organisms over difficult stiles. Moreover, the insinuation of operative transcendental factors is apt to mean a relapse in both religious and scientific development. As Dean Inge puts it: "Only a cosmos which seems to be sufficient to itself can be conceived of as having been created by God."

The other theory is that the purpose and urge were potentially expressed in the beginning, in the creative institution of the original Order of Nature, as a garden's beauty in its sown seeds. As Paul Janet says: "That which is precisely most worthy of God is to have made a Nature which creates itself." A divine purpose may have been realized in the world-process by endowing the original irreducibles with the capacity of progressively working out their destiny in a relatively free way, so that the evolution has from time to time a quality of creativity. It would be altogether unfair to this theory to charge it with the crudity of picturing a world launched into space in independence of the Creator. That *ex hypothesi* is one of the things God could not do; but in regard to His abiding relation with His creation I am not inclined to speak, though one has, of course, one's thoughts.

For I must end by saying that if there is a purposefulness behind Evolution, and if man is an instalment of one of the purposes, it may be our most urgent and practical duty to try to discern more of the great evolutionary trends so that we may assist in the fulfilment of more of the purpose. We must study the tactics, so that we may share more fully in the realization of the strategy.

SCIENCE, HISTORY AND PHILOSOPHY

PROFESSOR GUIDO DE RUGGIERO.

CONTACTS between Italian and English thought of late years have been both frequent and effective. One need only recall the English interest in Croce's philosophy and the popularity of works by the English idealists in Italy. But the post-Bradleian philosophy as a whole—modern English realism, as we may call it, for the sake of a name—is little known in Italy, and this is a serious omission; for with this movement English thought reverts to its traditional orientation towards the problems of natural science, while Italian philosophy, following its own tradition, continues to concentrate, with increasing definiteness, upon those of history.

This is a parting of the ways whose importance for the future of European speculation is very great. The present divergence is rooted in a profound opposition between two types of mentality. Theory of science and theory of history are the two great alternatives which have presented themselves in the past, and still present themselves to-day, to European thought. On the one hand, the Kantian-Newtonian type of mind, persisting, in spite of all differences, in all those mental tendencies which have been grafted upon the stock of natural science; on the other, the type of mind characteristic of the Romantic movement, holding firmly to the course of historical events. Between these two, modern speculation is rent by a great gulf. The former enjoys a traditional right of primogeniture, ever since the Greeks dismissed becoming as incapable of being the object of scientific knowledge and degraded history to a merely empirical level. For Kant, the universality and necessity which are the hall-mark of scientific thought were conceived on the Greek model, and were therefore inapplicable to the unique, non-recurring narratives of history. But the great advance of historical studies in the nineteenth century, due to the Romantic movement and the development of methodical scholarship, brought to light the scientific value of history and offered philosophers the opportunity of conceiving a universality of a different kind from that of scientific law: an *intensive* universality, so to speak, concentrated within the individual itself, and a necessity consisting of a system of connexions that constitutes the armature of history. Availing themselves of this new opening, the schools of Dilthey and Windelband in Germany and of Croce in Italy ended by reversing the traditional relation between natural science and history, and ascribing to the latter the primacy hitherto claimed by the former.

The question which now confronts philosophers is this: Are we in reality faced by an irreconcilable opposition? Does the conception of reality *sub specie historiæ* imply the total exclusion and negation of the alternative conception, and *vice versa*? Or is the reciprocal negation a partial and dialectical one? Do the two points of view, opposed though they are, imply and supplement each other?

As a matter of fact, it may be observed that, in spite of the separation between the two types of mind already noticed, cross-references from one kind of thought to the other are common, and are becoming commoner. Half a century ago scientific thought tended to entrench itself in a rigidly mechanical view of things and to repudiate all becoming, all development; to-day, to use Bergson's words, it "takes time seriously," and even asserts an "advance in nature," and assumes that the ultimate elements of which the world is made are arranged, not in an immovable space, like the atoms of older science, but in a mobile space-time, like Whitehead's point-events.

Still more recently, in an article on "Art and Science," published in the JOURNAL OF PHILOSOPHICAL STUDIES (July 1930, pp. 331–352), Professor Alexander emphasized the importance of the historical elements which enter into the construction of any scientific theory. Taking his stand on the Comtian classification of the sciences, he pointed out that, as we pass from the most general and abstract sciences, like mathematics and mechanics, to the more individualized and complex sciences, like biology and sociology, the proportion of historical elements increases. "The biological sciences . . . are more like history and less like mathematics, and there is consequently less artifice in them than in physics." And by "artifice" Alexander means to describe the special peculiarity of the scientific mind, the construction of schemata and laws superimposed on the course of historical events.

But this symbiosis of history and science must not lead us to confuse the two. They are quite distinct, and we must hold to the distinction if we wish to understand the significance of their interaction. Thus in the same article Alexander writes: "As the biological sciences grow and become more scientific, that is approach to the ideal of the physical sciences, not only does generalization enter, but measurement; and again, introducing experiment, they become physiological and admit of the statement of laws." Science and history, that is, though combined in a single complex whole, remain distinct. "Darwinism," continues Alexander, "illustrates excellently both these aspects. . . . It is an immense historical comprehension, and indeed it strikes the note of the historical method in science"; but, on the other hand, "besides being a great historical synthesis,

[it] offers in the notion of natural selection a physical law regulating the historical procession."

These relations and distinctions seem to me to deserve more methodical investigation and illustration. As long as we confine ourselves to analysing cases in which ready-made wholes of scientific thought contain elements of each kind, it is difficult to get beyond partial and fragmentary results. Starting from the Comtian hierarchy of the sciences, itself a classical example of naturalistic thinking and the constructions which it creates, we can do no more than evaluate, in each grade of the hierarchy, the quantity of scientific and historical matter forming its ingredients; we can never put our finger on the thing which, from the point of view of philosophical inquiry, is much more important—the actual way in which thought moves, in history and science respectively. All that the classification of the sciences can tell us is that, in proportion as the scientific or constructive element increases, the historical or individual element dwindles, as Alexander's example of the biological sciences suggests; but this is itself a fact that needs to be explained by studying from within the actual procedure of thought which fixes the inverse proportion of these elements. The investigation here proposed, in short, deals not with the finished products of intellectual work, but with the mental categories that preside respectively over scientific and historical research.

The great example of this kind of inquiry is the *Critique of Pure Reason*; but, dominated as it is by the classical prejudice against the scientific value of history, Kant's analysis confines itself to the categories which preside over natural science. But the studies of Dilthey and Croce have given us illuminating contributions towards a Critique of Historical Reason, and have broadened our mental horizon by rescuing history from its degradation to a merely empirical level, the level of a bare collection of facts, to which it had been reduced by the "philologism" of succeeding generations after the golden age of "historicism" in the Romantic movement. The above-mentioned writers have relieved us of the task of showing that history is not inferior to natural science in scientific value, even if its scientific value is of a special kind; that its distinguishing characteristic is not fact as something merely *recorded*, but fact as something *thought*, something brought within the universal relations of thought; that the realm of history is not restricted to some particular province of the knowable, marked off by external and objective signs from the province of natural science, but is coextensive with the knowable in its entirety; and that there is, therefore, a way of looking at the universe *sub specie historiæ*, that is, from the point of view of becoming and development, just as there is a way of looking at the same universe from the point of view of the constructions of natural science.

But what are the respective characteristics that distinguish these two points of view? How do the categories of scientific thought and those of historical thought differ? Between the *Critique of Pure Reason*, as a theory of natural science, and the Critique of Historical Reason there is, as yet, no adequate reciprocal understanding, precisely because these two points of view have been examined separately, each being taken in turn as excluding the other. What is needed is for philosophical inquiry to place them both on the same plane, and to undertake a comparative study of the mental categories presiding over their respective operations. Only so can we hope to arrive at a conclusion valid for both alike. This is the type of study which, in however summary an outline, we here propose to undertake.

Starting from the conclusions of the Kantian Critique, in order to avoid preliminary explanations, we may consider the two elementary forms of space and time as the two fundamental "frames" of cosmic being and cosmic becoming respectively, and as the two directions of consciousness along which natural science and historical science are to develop by means of the contributions supplied by mental categories of a higher order. Being in space, in an immovable geometrical "frame," quantitative, measurable, is the first condition of any naturalistic construction; becoming in time, with an irreversible order of succession, is the starting-point of all historical comprehension. Doubtless the whole of science is not contained in spatial schemata, nor the whole of history in temporal; these schemata are the poorest and emptiest determinations of their respective realms, yet they serve to indicate the decisive orientations of mental activity in the two, like arrows marking the direction of a movement.

The data of science, then, that is, the elements upon which subsequent elaboration is superimposed by scientific thought, are intuitions in space, which already carry within themselves, as in embryo, the characters of homogeneity and differentiation which are the basis of all scientific constructions. The data of history are events experienced in time, carrying with them a tendency towards internal organization, simply because the moments of time are inside each other and not outside each other like the parts of space.

This primary distinction may seem to be contradicted by the recent philosophical ideas that have grown up round the conception of relativity, which deny the rigid distinction between space and time and assert the necessity for a union of the two, a four-dimensional space-time continuum, constructed as a more comprehensive "frame" at once of cosmic being and of cosmic becoming. But we must remark, by way of preface, that this comprehensive point of view belongs neither to science nor to history as such, but to philo-

sophy, as the attempt to reach a higher synthetic vision of reality as a whole; this may be seen, for example, in the systems of Alexander and Whitehead. If now we leave this philosophical region of thought and descend to that of natural science, even in the form given to it by the work of Einstein, we find that the predominant sense of the term direction is the spatial sense, because in naturalistic constructions the time-element is regarded as a function of space; here there is no question of an experienced and internalized time, but of trajectories externalized in space, spatial relics (so to speak) of time. Bergson's conclusions on this matter seem to me absolutely convincing: the work of science tends to neutralize time, and to resolve successions into simultaneities, movements into stationary trajectories, *l'évolution* into *l'évolué* (becoming into that which has become). The scientific theory of relativity, as has been clearly shown not only by Bergson but by Meyerson, Cassirer, and others, is no exception to this rule. Whitehead's "events," however valuable in a philosophical construction, can never replace the material atom for the purposes of physics, because of the insuperable tendency of science to think in terms of *space* and *things*. Even the ingenious attempts on the part of the relativists to reduce simultaneities to successions serve only, within the field of science, to dislodge the special problem of science from one place and to make it reappear elsewhere, as the problem of reducing these new successions into a more comprehensive simultaneity. What can be the meaning of the determined attempt, made by the theory of relativity, to neutralize the points of view of different observers, unless it means that temporal differences existing only from subjective and one-sided points of view must be neutralized in a single and simultaneous vision of the physical world?

Natural science does certainly present us with a union of space and time, but only in the sense that it offers us an interpretation of time in terms of space, working along a line which is orientated in the direction of space. A similar and opposite process may be observed, working along the temporal line which symbolizes the movement of historical thought. In other words, when we place ourselves at the point of view of temporal becoming, we find ourselves interpreting space in terms of time. Consciousness perceives or constructs the parts of space successively, experiences them according to the temporal laws of consciousness itself. Now, in any activity, the advance of spatialization depends on the progressive irradiation of the activity itself. This process becomes especially clear and conspicuous in the higher manifestations of that form of thought which works along time as its fundamental direction, historical thought. Here the spatial world, which in this context is commonly called geographical, appears and unfolds itself to our view as a function

of the activity of historical agents. No doubt history in its turn depends on constant geographical factors, but only in the same way in which any spiritual activity depends on natural conditions, while at the same time it affirms its superiority to these conditions, its "emergence" at a higher level. In the last resort this proves a reciprocal relation between space and time, in spite of the bifurcation between these two directions of thought to which we have called attention; for this bifurcation, far from making it impossible for each to depend upon the other for its own completion, actually makes this necessary. Without the process of temporal becoming, the process of spatialization would stop, for want of experimental data to arrange. Without spatialization, time would be a mere dispersion, an ephemeral lapse, not a vital acquiring and possessing. Here we can see the significance of the modern philosophical theories of space-time, which replace the rigid mutual separation of space and time by a complementary and to some extent reciprocal relation between two processes. Thus, even at this elementary and almost sensuous phase in the development of the theoretic spirit, we find a forecast or premonition of the relations which the higher mental categories will establish between science and history.

In this further study of the categories of historical and scientific thought, Kant's Analytic of Pure Reason can give us substantial help. But Kant drew up his list of categories with too exclusive a regard to the procedure of natural science; it must be revised and broadened if it is to do justice to the wider horizon of a theoretic spirit including historical as well as scientific knowledge.

Let us consider the categories in their most elementary significance as the fundamental predicates of our judgments, or, to borrow an expression from Herbert of Cherbury, the principal questions which the mind asks of the objects which it perceives by the senses. When anything presents itself to us in space or is experienced by us in time, we ask ourselves: (1) *whether* it exists, (2) *what* it is, (3) *why* it exists, (4) what it is *worth*. The *that*, the *what*, the *why*, the *value* (or, modality, substance, causality, value) are the principal articulations through which the unifying and synthesizing activity of our thought works.

Now, within each of these four divisions we find a reflexion and confirmation of that dual nature of mental activity which we first found revealed in the distinction between space and time. Both science and history use causal categories, modal categories, and so forth, but they use them in different ways, so that the same categorial functions are specified (or rather, as we shall see, polarized) according to the direction taken by consciousness in each case.

(1) In the order of modality, scientific judgments are expressed in the hypothetical form, that is, according to the category of possi-

bility: if a certain condition occurs, a certain consequence will follow. In historical judgments, on the contrary, the modal predicate is that of simple being, factual reality: history states what, as a matter of fact, happened. The necessity of scientific judgments depends on this hypothetical character; it is not a necessity in the antecedent, but a conditional necessity in the consequent. The necessity of historical judgments is simply another name for the contingency of historical events: this particular event did actually happen, therefore it was bound to happen; any rational explanation of the event ultimately comes up against an insuperable element of contingency, which colours the whole of historical thinking and writing. Hence, while science, thanks to the necessity of its hypothetical laws, is able to arrive at rigorous statements, perfectly rational, which, however, travel round the edge of empirical reality without ever penetrating it,[1] history pierces into this reality and lives it over again, but is imprisoned within it, and can never escape into the realm of what might be (history, as we say, has nothing to do with *ifs*) and what ought to be.

(2) As regards the *what*, we find a similar polarization of scientific thought and historical. Developing along the ideal direction of space, science tends to think in terms of things, to conceive an identical and permanent substratum to which all empirical phenomena are referred. This substratum is either space itself, promoted from the status of a mathematical entity to that of a physical, as in the Cartesian type of science which to-day is enjoying a revival, or else it is something else occupying space, whose determinations tend to coincide with those of space, viz. matter. In history, on the contrary, conformably with the direction of time, which symbolizes becoming and movement, the *what* of things is expressed by the category of activity, as the driving force of becoming, the self-development of reality. An history conceived in terms of the category of substance would tend to eliminate all becoming and assert that there is nothing new under the sun, that everything is uniformity and repetition. To some extent this has actually been the ideal of naturalistic history, which has endeavoured to reduce the variety of human activities to mere effects of constant factors, for instance economic forces. The endeavour has always failed, and has only succeeded in eliminating everything which from the historical point of view is of any interest or importance. On the other hand, a science of nature which, instead of thinking in terms of things, tended to think in terms of activities, would be failing to discharge its proper function and struggling in vain to grapple with something inexpressible, incoherent, incapable of being measured. This is the

[1] Cf. Eddington's admirable description of the "circular" track of scientific reasoning in *The Nature of the Physical World.*

danger that besets all those tendencies in science which try to introduce concepts of activity, such as force, life, etc., instead of confining themselves to recording the measurable and calculable effects of these activities, which, *qua* pure activity, fall outside the realm of science.

It is characteristic of substance, as grounded in spatial externality, to be "what it is," without increase or diminution; hence the typically scientific laws which refer to this substance as a whole, or to parts of it, always express relations of permanence, conservation, temporal invariability. Activity, on the contrary, develops, grows upon itself, concentrates into the acts of its becoming that which it has already become, and transcends its hitherto realized being in virtue of an energy which tends constantly to create new realizations. Its law is the law of development, of progress. Moreover, just as in space the parts are given in the whole, not individualized by themselves, but individualized only in the whole which circumscribes and defines them, so the parts of a substantial whole have no proper determinations of their own; each acquires consistency and self-sufficiency only through its relation to all the rest. Hence arises the tendency of scientific thought to generalize and to identify through abstracting, a tendency which finds complete satisfaction only when the assimilation of the parts of matter to each other is complete and nothing is left unassimilated. Activity, on the other hand, is always individualized in its manifestations; if its parts imply each other, they do so only as one individual implies another, in the sense that every act posits the conditions of new acts, every individuation demands fresh individuations, because of an inward energy unsatisfied with what has been done and always pressing forward to a new action. Consequently, historical events are organic systems, internally differentiated and articulated, whereas systems of scientific entities are homogeneous mechanical systems, devoid of inner differentiation.

(3) In the order of causality, the form appropriate to scientific thought is deterministic connexion, which resolves the temporal relation of cause and effect into a simultaneous nexus of effects, that is, into a universal law of permanence and cosmic conservation. There is here an exact correspondence with what we noticed above in the case of the relation between time and space in scientific thought. Reduced to a mere dimension of space, time, as time, is annihilated; instead of expressing a constant process of change and renovation, it only serves to confirm and reiterate relations of identity and invariability. Similarly, the category of cause serves in science as the mere complement of the category of substance, or rather, it is a means of reducing the variety of events to the identity of substance: it only signifies that the quantitative relations of the material world do not change with the movements of things. History

knows a very different kind of causation. So far as it attributes validity to temporal succession as such, history demands an individualized causality, one which produces effects different from the cause, instead of assimilating them to it, and whose effects return into the cause in such a way that the product of an activity reunites itself with the activity that produced it. The type of historical causality is the intentional causality of which we have experience in all our conscious acts. The example in Plato's *Phædo* is familiar. Why is Socrates sitting in prison? Because (says the scientist, following Anaxagoras) he has bones, muscles, and sinews articulated in a certain way; but the philosopher replies: Because a sentence has been passed upon him which, though unjust, he does not wish to evade by flight, since that would contravene the laws. The two answers symbolize the two types of causal explanation. The difference is not the same as that between efficient and so-called final causes, as this is usually stated. Scientific causality is not efficient; it tends to reduce the synthetic relation of efficiency to an analytic relation of identity; it does not ask how the effect can be produced by or explained through the cause, but how the effect can be traced back to the cause, and this to antecedent effects, in an unbroken chain, each link of which is exactly equivalent to the next. Historical causality, on the contrary, is the true efficient causality, in so far as it is also final. The idea of an intentional causality, an idea which we derive from our psychological experience, combines in itself the two moments of efficiency and intentionality, because it implies the idea of an end as moving us to action. Does it follow that teleology ought to be introduced into historical explanations? Certainly; but only so far as teleology signifies intentionality, as the moving principle of consciousness. If teleology means a principle that transcends the process of historical becoming, we can have nothing to do with it; final causes operate just so far as we present them to our minds and set them before us as ends of our action. But the validity of ends as intentional motives does not imply that they are limited to the sphere of the single individual organism. There are societies which act as individuals, and in which the collective end pervades the activity of the single members; and there are conflicts between societies, and therefore between their ends, which constantly introduce modifications into the effects of historical causes.

In fine, the difference between the two modes of causal explanation lies in this: by deterministic causality we set up external and quantitative connexions between the parts of extended material substance; in history we set up internal connexions between the moments of becoming, so far as some of these actually explain others and include others in themselves, as the present is explained by the past and includes the past in itself. In the one case we have a con-

tinual action and reaction, in the other a continual agitation, or transference of a quantum of movement from one part of substance to another; in the one case a qualitative diversity of cause and effect, in the other a complete quantitative equivalence. Hence there are in science no genuine causes and no genuine effects, but only an unbroken chain of effects; whereas in history we find real causes, that is, spontaneous and intentional combinations of actions which do not refer outside themselves for the principle on which they depend, because history consists of individuals possessing initiative, whereas the entities of science, deprived as they are of individuality, possess nothing except the ability to transmit, impersonally, what comes to them from without.

Here too we must guard against illicit transferences from one mode of causal explanation to the other. Deterministic connexion, when transferred to the realm of history, makes it impossible to grasp the peculiar characteristics of historical events. Thus historical materialism, by attributing a uniform causal agency to economic facts, destroys all diversity among the effects of this agency, because it forgets that the so-called economic conditions do not act mechanically from outside, but produce their effects through a process of internal motivation which diversifies them according to the diversity of the agents' situations and the peculiar way in which their consciousness conceives them and reacts to them. And, on the other hand, intentional causality, applied to natural science, encumbers it with illegitimate animistic relations, ill adapted to the realm of depersonalized and quantitative entities in which science has its being.

(4) To complete our rapid outline of historical and scientific categories, the same antithesis reappears in the category of value. To assess the value or importance of a thing, we judge it by reference to a universal principle posited by ourselves as a criterion or standard of valuation. Now, it is characteristic of the entities of science and our ideas of them that, taken singly, they have no intrinsic value whatever, and they acquire it only so far as they are included in the entire system of entities or ideas of which they are parts. What has value is thus the system, and this absorbs and neutralizes within itself the single elements that go to make it up. Thus, if we take the supreme theoretic value, truth, no scientific proposition taken by itself can be regarded as true; truth is just the coherence of a whole system of scientific propositions, a system leaving no single proposition outside itself, isolated and disconnected. In history, on the contrary, general and common elements have by themselves no value at all; a history consisting of a mass of generalizations is empty and pointless. What counts is the individual; not of course the atomic individual, but the individualized action

which differentiates itself from all other actions. And general ideas count just so far as they are fused with this individual and help to differentiate it. Individuals do not all stand on the same plane as historical agents; the more the individual can absorb into himself of the world in which he lives, the more his action asserts itself as an individual expression of collective desires and demands and aspirations, and the greater is its historical importance. In consequence, what is historically true is not general ideas but their individual embodiments.

In short: between science and history there is an inverse relation. The one is *abstracting* thought, which tends towards uniformity and identity, and cancels all the differences which it meets in its path. The other is *individuating* thought, tending towards multiformity and diversity, and enriching itself as it advances by collecting to itself all the individual determinations of activity that emerge in the course of time. On the one side we have a static projection of the world in space, on the other a dynamic progression in time.

Now, this opposition is not ultimate and irreducible. It is not of such a kind as to necessitate the complete destruction of one form of knowledge in the interests of the other. It is a constructive and fertile opposition. This appears from the fact that, as we already saw in the case of space and time, so also in the case of the respective categories, each side needs to be supplemented and integrated by the other, although it is opposed to the other. The category of possibility, which informs scientific thought, would be utterly impotent unless it could rest upon a factual reality. Every scientific abstraction, and therefore every hypothetical law, must have as its starting-point the observation of a certain "historical" group of phenomena. And, on the other hand, every reality must be rendered definite and concrete by its relation to unrealized possibilities. In studying the genesis of historical actions, therefore, we can be greatly helped by knowing the main alternatives which the unchanging nature of the agent sets before his activity. Similarly, every activity, in realizing itself, incarnates itself and, so to speak, substantializes itself in bodily form, and every substance reveals its nature by its activity. Again, all determinism presupposes an individual causality, and the effects of every individual cause, once produced, arrange themselves into a deterministic system. And lastly, all value implies a reciprocal relation between the individual and the universal. If the world of history is the world of variety, of novelty, of ceaseless creation, and the world of science that of uniformity, permanence, and conservation, it is clear that the one cannot exist utterly separated from the other, and must feel the other as necessary to itself, even if opposed to itself. Scientific thought could never advance, but would freeze to death in its own laws, if it

ceased to renew and nourish itself by perpetual contact with historical experience. When we look at its systems of hypostatized entities, science gives us the impression of something rigid and static; but when we look at its inner growth, when we think of it as it lives in the mind of the scientist, we see that it constantly breaks through the hard and fast formulas in which it imprisons the world, and must be conceived as a continuous process of historical development. This is why we call science not *abstract* thought but *abstracting* thought; it not only creates abstractions, it also overcomes them; it is not a static system of formulas, but a dynamic systematizing process, perpetually deriving new material for assimilation and systematization from the inexhaustible variety of the historical world.

Historical thought, on the other hand, if in its movement it never encountered any halt or pause due to what we may perhaps describe as the coagulation of historical activity into substance, would merely waste away in an utter dispersion, an all-devouring Heraclitean flux. Novelty and variety are inconceivable without identity and permanence. Entities such as institutions, nations, states, cities, constitutions, economic laws, and so forth, are nothing but the results of a tendency on the part of activity to substantialize itself into things; and these things are what enable us to recognize the identity of the agents in the novelty of their actions, as well as the identity of the tendencies and goals of these actions, and give to historical thought its solid constructive framework.

The task of showing that these two opposed forms of thought spring, in spite of their opposition, from a common root and must end in a final reunion is a task for philosophy. Philosophy as such cannot identify itself either with science or with history; it must rise above the conflict into a region where it can judge between the claims of the combatants. Scientific knowledge and historical knowledge form ideal divisions of the cognitive spirit, neither of which can claim by itself to exhaust reality, but each is bound to acknowledge the other as its own limit. Science only attains formal rigour in its laws by abstracting from the individuating conditions of the historical process; its limit, therefore, is laid down by the individual, that which can never be repeated. Laws of identity and statistical laws, the two great *moûles* of scientific construction, make abstraction precisely of whatever singularities there may be in the behaviour of phenomena; if we want to know which of the various possible paths is that actually chosen by reality in its becoming, there is nothing for it but an appeal to historical observation. History, on its side, is bound hand and foot to an irreversible temporal and causal series which prevents it from dominating its object in such a way as to embrace it in a law rising superior to time, and to a factual contingency which, however permeated it may be with

rationalistic explanations, always to some extent resists the effort after complete assimilation. In any case, the rationality of history is an *ex post facto* rationality. *Ante factum*, history offers no foothold to reason; historical events cannot be scientifically foretold or anticipated. This is why history is of so little value for practical guidance. Action is directed towards the future, and the future lies wholly outside the field of historical knowledge. The formulas of science, on the contrary, eliminate time altogether, and with it the novelty of the historical process; and therefore they anticipate the future just sufficiently to enable us to use them with a certain degree of confidence as guides for action. This partially justifies the pragmatist theories of science which are so widespread in modern philosophy, though it would not justify a theory which deprived science of any theoretical value whatever.

To follow the rhythm of these two mental forms in their development, to grasp their necessity and constructive value for the life of the spirit, and to arrive through this process at a view of the world at once single and articulated—these are perhaps the most important tasks that confront the theory of knowledge at the present time. But if this is to be done, it seems to me that philosophers must first of all make up their minds to abandon their present *fin de non recevoir* with regard to dialectic. Throughout the history of the philosophical tradition from Plato to Hegel, dialectic has played a dominant part in the speculative explanation of the universe. Hegel's misuse of it, and then the growth of scientific habits of thought, have alienated the minds of philosophers from this method, which nevertheless is the royal road of philosophy. To-day the dialectical method seems to have become the unenvied monopoly of a little group of surviving Hegelians. But if philosophy is what it is generally thought to be, the theory of value and of valuation, I do not see how it can do without dialectic unless it is to surrender it prime *raison d'être*. It is in the nature of all values to polarize themselves into two opposite terms, conflicting with one another, and yet each at once demanding and supplementing the other. No beauty, no truth, no goodness is intelligible apart from this connexion with its own opposite; and the synthetic point of view, which combines the opposites into an articulated and living unity, is precisely the point of view characteristic of philosophy. If present-day speculation has abandoned dialectic, this is because philosophy has come by degrees to copy the methods of natural science, which, with its tendency to think in terms of things, congeals the results of intellectual labour into hard and fast schemata, from which every trace of the dialectical activity that created them is banished. The dialectical character of thought thus appears only in its processes, and not in its results. Concentrated as they are upon their objects,

the particular sciences tend to embody thought in things; and obviously things, as static and circumscribed determinations of reality, admit of no further dialectical treatment. Philosophy, on the contrary, as the critical valuation of scientific concepts, leads the work of thought back to the focus of the activity from which it proceeds, and therefore the dialectical character of mental activity is bound to reappear in philosophy. Hence the dialectical problem of truth, as the antithesis of error and the overcoming of error, never appears in the particular sciences. There are only truths embedded, so to speak, in things, whence thought seems to extract them. It is only philosophy, with its centripetal movement, that disentangles these truths from the things and restores to them the fluidity that belongs to their true mental nature.

The relation between science and history, which we have here attempted to illustrate, is just such a dialectical relation, of the kind which philosophy alone has the power of grasping. If we place ourselves at the point of view of science, we are obliged to return a sheer negative to the claims of the historical point of view, and *vice versa*; only from the point of view of philosophy, from which the inner genesis of mental activity becomes visible, can we see the two points of view as opposed to each other, and, at the same time, as standing in need of each other and making good each other's defects.[1]

[1] In speaking of the "point of view" of philosophy, I do not of course mean to refer exclusively to the professional philosopher as a different person from the historian and the scientist. I refer to the philosophical function of the mind, a function present both in the historian and in the scientist. That such a function is necessarily present in the minds of these persons is a corollary of the dialectical conception of philosophy stated in the text.

THE ERRORS OF SIR ARTHUR EDDINGTON

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All candid philosophers, in setting out on their great task of co-ordinating and criticizing the whole range of human thought, must often feel embarrassed by the limitations of their own knowledge. Their difficulties in dealing with scientific thought have increased very greatly during the last thirty years. For, while science has been rapidly growing more complex and abstruse, philosophers have been tending to require a more intimate knowledge of it. They are no longer interested only in scientific methods (which, it is often assumed, can be studied apart from their applications); they are beginning to find significance in particular propositions and principles. Some of these cannot be comprehended in their entirety by anyone who has not submitted himself to a training so specialized and so severe as to be almost incompatible with the width of outlook that makes the philosopher. Accordingly, philosophers have abandoned all attempts to acquire their knowledge of certain branches of science (particularly physics) from the original memoirs and expository treatises addressed to scientists; they have recourse to interpreters.

Now it might be argued that interpreted science is not science at all. For interpretation to the laity of such a subject as mathematical physics involves the omission of essential elements, for example, the mathematical analysis and concepts summarizing extensive and intricate collections of facts. Without these elements the subject could never have advanced; from them the science derives its meaning for all serious students. The proper reply to such an objection is, presumably, that these elements, though essential to those who seek to advance science, are relatively unimportant to those who seek merely to understand it. But if this is so—and of course there is much to be said on the other side—there must be other elements essential even to the philosopher; interpretation will involve distortion unless they are preserved. The identification of these elements is surely a problem for philosophy; the interpreter, in deciding what he must retain, commits himself to some form of philosophy; the philosopher whom he addresses may receive his knowledge of science from sources tainted by doctrines that his analysis of science may lead him to reject.

The dangers arising from this source might be avoided if the interpreters from whom philosophers receive their knowledge

formed a large and representative body of scientists. For if the interpreters differed in their outlook, a comparison of them might enable the common (and therefore purely scientific) elements to be disentangled; if they agreed, any philosophical doctrines implied by their interpretation might be taken as truly and necessarily part of science. Actually the facts are very different. Few scientists attempt interpretation and fewer still succeed. Even among the very small group of fully equipped scientists who gain the attention of philosophers at all, some exercise much more influence than others. For many philosophers, and for most journalists and novelists, modern physics is simply what Sir Arthur Eddington says.

His exceptional position has probably one of three reasons. The first, a very good one, is his exceptional power of expression; he may not have more to say than others, but his humour and literary charm enable him to say it better. The second is the authority that he derives from being himself a very great scientist, so great that it is almost impertinent for lesser men to call him so. This is not a good reason. For the laity do not read the works that prove his greatness; these need interpretation as much as the works of any other scientist. In the works that they do read he has no opportunity of showing that, as a scientist, he is anything more than well informed, incapable indeed of the minor errors that so often betray the amateur, but not more incapable than hundreds of well-trained men wholly devoid of distinction. On the other hand, it is not definitely a bad reason. The third reason is that he is much more than a scientist; unlike many great scientists, who become puerile as soon as they leave their own province, he is worth hearing on any subject on which he cares to speak. But this is a bad reason. For if his interests and his intelligence extend beyond the bounds of science, the danger that something alien to science will creep into that part of his work which professes to be purely interpretative becomes very serious indeed. My object here is to maintain that he has indeed fallen into this error—or, perhaps more accurately, that those who regard his work as purely interpretative have fallen into it. His error is one of omission rather than commission. He has distorted science, not by introducing foreign elements, but by leaving wholly out of account those essential elements from which science derives its practical value.

Of course a protest will at once be raised that practical value is not in the least essential to science, that only pragmatists believe that propositions are true because they are useful, and that the scientific propositions that interest the laity most, such as the doctrines of Evolution and Relativity, have so far been devoid of any practical value whatever. But though much of science has no actual

practical value, it all has potential practical value; and, though this practical value, actual or potential, does not make science true, it makes it science. For some philosophers, no doubt, science is merely one of the various activities of the human mind, co-ordinate with art or religion; they would take as much interest in it (or as little) if it had no validity outside the laboratory, and if the experience with which it is concerned were as remote from the daily life of the plain man as the ecstasies of the sensitive artist and the religious mystic. To such I have nothing to say. But for most modern thinkers, science possesses a certain "authority," denied to art or religion or even mathematics, because it can handle those hard facts of everyday existence, which men may value differently, but none can wholly ignore. The power of prediction, and therefore of control, from which science derives its practical value, is the source also of its philosophic importance. A science that lacked such power, and could not distinguish facts from dreams, would have affected neither our material nor our spiritual life; the practical value of science and its intellectual interest are inseparable.

But, though they are inseparable, they attach to different parts of science. Practical value attaches to laws, intellectual interest to theories. Laws, in general, are interesting only because they establish theories; theories are useful only because they lead to the discovery of laws. Fundamentally laws and theories, though interdependent, are distinct, and confusion between them would destroy the basis of all scientific investigation. Superficially they are often so similar in their form and in their content that careful thought and extensive knowledge is needed to decide where the boundary lies. My chief charge against Eddington is that he encourages a confusion between laws and theories. In order to ascertain how the confusion may arise and to what errors it may give birth, we must start with a brief inquiry into the difference between them. Since the only science with which we are concerned here is physics, we may suppose for brevity that our laws are experimental and our theories mathematical.

A law states that certain experiments can be performed; that is all it states. If I assert that the pressure of a gas increases with its temperature, and if you doubt the statement or do not know what it means, I must demonstrate experiments to you. The experiment with which I shall start will be one involving a pressure-gauge and a thermometer; and if you were an expert, who by some mischance had failed to acquaint yourself with that particular law, that would suffice. But if you are completely ignorant of physical apparatus, you will rightly ask why I call the readings of one instrument pressure and those of the other temperature. To explain this I shall have to state other laws and perform other experiments to demon-

strate them. For instance, nearly all thermometers are based on the law that bodies of different temperatures tend to the same temperature when brought into contact; this is the law that gives the term temperature its meaning.

Here appears one of Eddington's minor but characteristic errors. He tells us again and again that the data of physics are "pointer readings," suggesting that they are confined to a very narrow and special region of experience. The suggestion is superficially plausible only because modern physicists are accustomed to leave so much of their work to instrument makers and standardizing laboratories; their practice is admirable as an economical division of labour, but it is most misleading in philosophical analysis. Pointer readings are interesting only because they are the identification marks of certain experiments of which they constitute one small and not very important element: these experiments are an essential, but concealed, constituent of any experiment involving pointer readings. The experiment that a law really means is almost always vastly more complex than the experiment that an expert would accept as a demonstration of it. If we want to arrive at the ultimate data of physics, we must analyse all the concepts, such as pressure and temperature, in terms of which laws are conventionally stated, and ask what are the experiments that they imply. We must continue our analysis (if we can) till we find laws involving no complex concepts, and meaning nothing but the experiments by which they are demonstrated. We shall then discover that the true data of physics are infinitely more complex than the highly specialized observations made in a modern laboratory; they include the whole of the incoherent mass of sensory experience that constitutes the daily life of the ordinary man.

This complexity of laws is the clue to their discovery. If, in order to discover a law, we had always to search the tangle of unanalysed experience in the hope of finding an experiment that could be demonstrated at will, progress would be very slow and fitful. Actually laws are discovered by combining previously known experiments to form new and more complex experiments. Thus, when we have found the laws that gases have pressures and temperatures, it is a simple matter to inquire whether there is a law relating the pressure of a gas to its temperature. In a highly developed science the number of experiments and the modes of their possible combination already known is so large that the formation of new combinations and the discovery of new laws is almost a matter of routine, requiring nothing but energy and an adequate training in recognized technique. Almost—but not quite! Even at this stage there is room for natural aptitude, and some are more successful in discovering laws than others. In the earlier stages natural aptitude is essential, and in

those who initiate a branch of science, starting from unanalysed experiences, it amounts to genius.

One necessary ingredient of this aptitude is love of the work. Unlike the mathematician to whom (as a mathematical friend once told me) every material object other than a sheet of white paper is intellectually abhorrent, the experimenter is at home in the material world. He enjoys handling apparatus, making it, devising it, and getting it to work. This affection for the concrete is naturally accompanied by a distaste for the abstract. The experimenter finds little pleasure in pure thought; the propounding of paradoxes and the asking of unanswerable questions drives him to impotent fury. In particular, he shrinks from the question, so enticing to philosophers, why he believes that experiments demonstrable to-day will be demonstrable to-morrow. A belief that there are demonstrable experiments is inherent in the innermost substance of his thought; he cannot divest himself of it, even so far as to consider why he holds it. The most "reasonable" pronouncement he would be likely to make, if pressed, is that if experiments did not repeat themselves, there would be no joy in experimenting. A recent writer in this *Journal* announced that in the discovery of laws the scientist must assume something or other very profound. He would have been right if he had said "must not assume"; anybody who could assume any abstract proposition of the kind he stated could not be an experimental scientist and could not discover laws; but he could be a Bacon, a Whewell, or a Mill, discoursing about science without practising it.

This aversion from the logical and the abstract makes scientists appear very naïve and stupid fellows to those whose tastes differ. The point that I want to make is that this *naïveté* and stupidity is an essential part of their science, that these naïve and stupid people are the true scientists, who make science what it is and give it practical value.[1]

One word more before we leave laws. I have said nothing about numerical laws, which are the basis of all mathematical science; such laws, for example, as that the pressure of a gas is *proportional* to its temperature. It may be questioned whether this conception of proportionality is, as I have suggested, capable of being interpreted solely in terms of demonstrable experiments. Personally I think it can, while admitting a doubt. But there is no doubt that, even if such laws contain an element that is not experimental, they

[1] Of course I, in my humble way an experimenter, do not plead guilty to stupidity. It seems to me that the philosophers are wrong who imagine that reason and logic can lead to the discovery of truth; they are merely ways of justifying and explaining truth to those who have themselves no power of discovery.

also contain elements that are. Eddington seems sometimes to suggest that physical laws are merely laws between numbers, numbers being purely mathematical and abstract conceptions. That is entirely false. It may be true that it is only the relation between numbers that interests the mathematician, and that, for example, the equation $xy = c$ means exactly the same thing to him whether it represents a law concerning hyperbolas or one concerning perfect gases. But that is merely because he deliberately ignores a difference, not because the difference is not there. The sign = states, besides a numerical relation, the same in both laws, a physical relation, very different in the two, and describable only in terms of experiment.

Now let us turn to theories. Theories explain laws. The essence of explanation is the substitution of more for less satisfying concepts. It may take many forms, which it is not our business here to analyse and classify; but two forms require attention. One is explanation by generalization; ideas are the more satisfactory, the more general they are and the wider the field of experience that they cover; a thing is explained when it is shown to be a particular example of something more general. Explanation of this kind plays some part in science, and especially in its applications to facts of common experience. I offer a scientific explanation of the connection between low barometric pressure and rain, when I suggest that it arises from the more general connection between the cooling of a gas by reduction of pressure and the condensation of vapour contained in it. But this is not the explanation of a law by a theory, but the inclusion of a narrower within a wider law. Theoretical explanation, with which we are now concerned, may and usually does consist partly in generalization; for the theory may explain several laws, and thus exhibit each as a special case of something more general; but the generalization is not an important part of the explanation, and some important theories in these earlier stages have involved no generalization at all. Theories of science, which regard generalization as the main object of science, mistake the accidental for the essential.

The second form is explanation by familiarization; a mysterious event is explained when it is shown to consist of familiar happenings in unusual relation. The explanation offered by theories is rather of this form; for the essence of it is the introduction of new ideas, not contained in the laws to be explained, that are satisfactory because they are intrinsically acceptable and make an immediate appeal to the sense of intellectual fitness.

The connection established by the theory between the new ideas and those to be explained can probably be described in many ways; the way that seems to me most illuminating analyses a theory into

two separate parts, the "hypothesis" and the "dictionary." The hypothesis consists of propositions about the new ideas, characteristic of the theory—the hypothetical ideas, as we shall call them; the dictionary relates these ideas (or combinations of them) to concepts involved in laws (such as temperature or pressure) in such a way that propositions about the hypothetical ideas can be translated into laws describing experiments.

Two examples should suffice to illustrate this analysis. In the dynamical theory of gases, the hypothesis consists of statements about the properties of molecules and the manner of their motions and reactions with themselves and the walls of the vessel; the dictionary relates the mean kinetic energy of a molecule to the temperature of the gas, the mean rate of change of momentum at the walls to the pressure, and so on. In Bohr's theory of spectra the hypothesis lays down the necessary conditions for a stable atomic orbit; the dictionary relates the transition between two stable orbits to the emission of a line in the spectrum.

The theory is tested experimentally by inquiring whether deductions from the hypothesis, translated by the dictionary, describe experiments that are actually demonstrable. This criterion is necessary, but it is not sufficient. If it were sufficient, anyone could invent a theory to explain any law or set of laws. A further criterion is that the theory must predict or seem capable of predicting laws other than those on which it was originally based. Those who profess to regard theories as valuable only because they suggest new experiments would probably regard this as the chief criterion. But it is difficult to believe that this doctrine is really accepted by scientists —or at least by any physicists; they appear to accept it because they are timid about expressing their true opinions. For it leaves no room for explanation, which we all know, though we may not admit it, to be the real function of a theory. A theory explains only if the hypothetical ideas are intrinsically satisfactory, and the first question that must be asked about any theory before it is worth while to apply any new experimental tests is whether it is so plausible that, if it survived those tests, it would explain something.

But what makes a theory plausible? Until recently it was often maintained that the only plausible theories were "mechanical" theories in which there was a close analogy between the hypothesis and the laws governing some mechanical system, and that no theory could explain unless it were thus based on a mechanical analogy. The dynamical theory of gases is typical of such theories; the propositions of the hypothesis concerning the molecules are closely analogous to laws describing experiments on a collection of elastic balls. To-day (we are often told) plausibility consists rather in a

generality and simplicity that satisfies the mathematician's sense of form. Doubtless there has been a change in the ideas that physicists will admit into these theories as intrinsically satisfactory. But the extent of the "revolution" that has overthrown the old "classical" physics based on Newtonian mechanics is often exaggerated. Much of the plausibility of the older theories lay, not in their use of specifically Newtonian doctrines, but in the wider attempt to explain all forms of change as changes of motion and position; such changes seem hardly to require or to be capable of explanation. But this feature persists in the newer theories which adopt dynamical principles other than the Newtonian. Bohr's theory of spectra or Sommerfield's theory of the metallic state is in this sense as mechanical as the dynamical theory of gases. There persists an analogy between the hypothetical ideas and the concepts in terms of which laws are stated.

This analogy between hypothesis and laws is apt to obscure the distinction between them. When certain hypothetical ideas are called the position, velocity or mass of a molecule, it is not easy always to remember that statements about them are essentially different in character from statements about the position, velocity or mass of a material body. The confusion is further encouraged because the terms in which true laws are described are often derived from theories, just as the terms in which theories are described are usually derived from laws. For these and for other reasons that need not be given in detail, it is not always easy to decide whether a given statement is a law or a theory, and there are border-line cases not easy to classify. But that does not mean that the distinction is not valid or that there are not other cases in which it is perfectly clear. If it were neglected altogether, most theories would cease to fulfil their primary purpose, namely, to explain. Thus a molecular theory of elasticity would explain nothing if we really attributed to molecules elasticity of the same kind as that possessed by elastic bodies. The properties of a molecule, its position, velocity, elasticity, and so on, are entirely different things from the properties of material bodies called by the same names. For—this is the essential point—if they are displayed in experiment at all, the experiments are entirely different. Some hypothetical ideas, such as the position or velocity of an individual molecule, are not accessible to experiment at all; the dictionary contains no entries by means of which propositions concerning them can be converted into laws. Others, such as mass or mean velocity, are accessible to experiments, but only (it must be remembered) by means of the dictionary. The experiments by which we determine the mass of a molecule are entirely different from those by which we determine the mass of a billiard ball; moreover, even these experiments would not determine the mass unless the truth

of the theory is assumed, while the mass of a billiard ball can be determined without any theory whatever.

The main fallacy of the doctrines against which I am inveighing is a neglect of this distinction between a law and a theory. Of course Eddington himself understands it perfectly; he could not do valuable scientific work if he did not.[1] But in his popular writings he neglects it entirely. His neglect is so complete and so consistent that it must be deliberate; and indeed there is good reason for it. It enables him to make his exposition exciting by an appearance of paradox, and to avoid altogether any inquiry, necessarily somewhat tedious to the laity, into the evidence for the theories he expounds; his perfect freedom from any qualms in this matter is one of the main reasons why he is so readable, lucid, and inspiring.

The most striking example of his practice is his use, in expounding the theory of relativity, of his famous "illustration" of two men in aeroplanes smoking cigars. He tells us that "according to relativity" they would make the most surprising observations entirely incompatible with all our common-sense notions of time, and even with the difference between past, present, and future. The truth is that, if relativity tells us anything about these men smoking cigars in aeroplanes, it tells us (in conjunction with chemistry, physiology, and the older parts of physics) that they could not exist, that no two living beings could possibly move relatively to each other with a velocity nearly that of light, and yet be in a position to make any observations at all. If we want to know what relativity does predict in the realm of observations and experiment, we must inquire what are the observations and experiments that establish the theory; we shall then find that they are not in the least surprising; that they are perfectly consistent with common-sense notions of time and with a sharp distinction between past and future, and that they do not even involve two observers moving relatively to each other. In fact the main difficulty in obtaining conclusive experimental evidence in favour of Einstein's theory is that the laws that it predicts are qualitatively so exactly similar to those which have long been taken as natural and inevitable that it is difficult to be certain of the minute qualitative differences. The time, space, and motion of relativistic theory are very different things from the time, space, and motion of experiment, just as the velocity of a molecule is a very different thing from the velocity of a material body.

But, somebody will say, if certain purely practical obstacles were removed and if certain experiments, not possible now, were per-

[1] Indeed, if he cared to defend himself from my criticisms he could point to passages in his books which make just the points that I am making here. But they are so unobtrusive that his non-scientific readers miss them.

formed—— Stop there! When you propose that assumption, you immediately remove the discussion from the realm of science, just as when you say, If all men were contented with their lot, you remove it from the realm of politics. It may be great fun pursuing the consequences of your hypothesis, but it is not science. For science the distinction between what is and what is not possible, between experiments that can be demonstrated and experiments that cannot, is absolutely vital and essential; if it neglected that distinction for a moment, science would cease to be science; it would cease to have practical value.

Two other examples may be noticed. Eddington is always saying that the interior of the most solid body is "really" as empty as interstellar space, and contains only minute particles separated by distances incomparably larger than their dimensions. The conclusion that his readers are naturally inclined to draw is that facts are not facts and that things are not what they seem. Such a conclusion would be quite unjustified. The "distances" between intro-atomic electrons are quite different things from the distances between stars; they are detected by entirely different experiments; and the experiments that prove that the electrons are widely separated include, as an essential part, those that show that material bodies are impenetrable in the ordinary sense. The tenuity of an iron atom is not incompatible with the solidity of an iron bar, but rather dependent on it; if iron bars were not solid, we should have no evidence that iron atoms are tenuous.

Again, he makes great play with Heisenberg's Principle of Interdemination, which asserts (among other things) that it is impossible to determine *both* the position *and* the velocity of an electron; but he omits to point out that experimentally it is impossible to determine either. The position or the velocity of an electron does not mean the same thing as the position or the velocity of a rifle bullet. In fact it is such an entirely different thing, something so purely hypothetical and so distant from the realm of fact and laws, that Heisenberg himself, in an earlier state of his theory, was proclaiming that it ought to be removed entirely from the conceptions of physics. There is no difficulty in determining both the velocity and the position of any body accessible to experiment.

Lastly, Eddington suggests that Heisenberg's theory helps to solve the old puzzle about the freedom of the will by destroying much or all of the scientific evidence in favour of determinism. But surely such evidence as science ever produced in favour of determinism was based on the simple fact that there are laws, and that in certain departments of experience effects can be demonstrably predicted from ascertainable causes. Heisenberg's theory does not alter this fact in the smallest degree. It throws no doubt

on the validity of laws; indeed, the evidence for it, as for any theory, consists of laws; nor does it limit, but rather extend, the range of experience in which laws are discoverable. All that it does in this direction is to indicate once more that a complete explanation of laws must introduce ideas that are not suggested by analogies with laws.

But I shall be told that I am proving too much. These new conceptions of such great philosophic interest—a time that is a form of space in which past and future may be confused, or particles that have no positions but only probabilities of appearing in them—these have surely some scientific reality and therefore some philosophical significance. I do not deny it; what I maintain is that Eddington exaggerates and distorts their importance. Let me try to explain by analogy. All painters, even the least classical, would admit that the beauties of nature and of art are not wholly dissimilar, and that a painter may rightly be influenced by the possibility of representing natural objects on canvas. But many would deny vehemently that it is a legitimate criticism of a picture to point out that it is not much like any natural object, and that the object to which it is least unlike is exceedingly ugly; to understand the relation between natural and pictorial beauty and the place that representation should play in painting, a critic must study art with sufficient care to gain some appreciation of an artist's feelings.

In the same way I admit that these strange ideas have some place in science. They have influenced the inventor in framing his theory and, even more, the scientific world in understanding and accepting it. To them is due part of the intrinsic attractiveness of the theory. But they are not an essential or permanent part. The theories from the outset derived attractiveness also from mathematical elegance, and they are coming to derive it from familiarity and established use. The paradoxes about clocks and measuring-rods are vanishing from modern expositions of relativity; in the next generation they will probably disappear entirely from scientific writings and be remembered only by the misunderstandings that they have generated. To regard them as the main feature of the theory, and to base on them our conclusions concerning the nature of philosophical reality as revealed by science, is a vulgar error; the nature of their reality can be appreciated only by those who have studied science sufficiently to know how a scientist thinks.

For when a scientist says that a theory is true and that it gives information about reality, what he (like most others) means is that it satisfies his intellectual cravings. Now the chief of those cravings is a desire to know facts, just because they are facts, and a desire to explain them or relate them to each other in some sort of coherent scheme. The scientist is in little danger of confusing hypotheses with

laws, because a power and a wish to distinguish between imaginary and real facts is ingrained in his very nature. Nobody can understand what his attitude is towards the analogies that form part of theories who has not some experience of and sympathy with the scientist's attitude towards facts. It is not necessary that he should know all the facts in detail, for a scientist can appreciate fully theories in a branch of science of which his knowledge is very superficial. But he must know that there are facts behind the theory, and that the prime function of the theory is to explain those facts. Those who by temperament are naturally averse from facts, and have been encouraged by popular expositors to regard the experimental foundations of a theory as something wholly separate from its meaning, are as little fitted to discuss scientific theories and scientific reality as an intelligent but hermaphroditic oyster would be to appreciate the beauty and significance of erotic poetry.

Must we then admit that modern physics has no special message for philosophy, and that philosophers must return to regarding science merely as the empiric description of a field of experience in which they feel a scant interest? I do not profess to know. But it seems to me that if philosophy has anything to learn from recent science, the lesson is to be found, not in particular theories, which, like all theories, are liable to sudden modification and supersession, but in the great and probably permanent change in the relation of mathematics and physics.

Much of mathematics takes its origin from experimental science, arithmetic from enumeration, geometry from the measurement of rigid bodies, and so on. In separating from the parent stock, mathematics confined itself to one part of experimental relations, the numerical part; it was thereby led to alter and generalize the concepts from which it started, producing from them concepts without validity in the experimental field, such as imaginary numbers, hyper-space, or continuity. When these first appeared, experimenters were inclined to hostility; they doubted whether any good could come of the study of concepts devoid of physical meaning. But they soon found that the new concepts were useful in calculation; they accordingly admitted that they were permissible, or indeed essential, in mathematical argument, though they still insisted that methods involving them were valid only in so far as they were mere substitutes for others in which physical meaning could be assigned to every concept. In the last stage they have realized that their criterion of physical meaning was too narrow, and that some of their apparently insoluble problems could be solved by admitting purely mathematical ideas into their theories (but not, of course, into their laws) on a standing of full equality with ideas that derived their meaning from experimental analogies.

The first two of these stages can be paralleled in the relations between philosophy and science. Science became a separate study when it confined itself strictly to one part of the field of experience, in which personality can be eliminated and universal assent obtained; it developed concepts, such as that of an experimental law, which have no validity for experience outside its own field. Philosophers were mainly interested in this experience; they protested therefore that these concepts were not real, and doubted whether science could lead to truth. More recently they have admitted that the concepts of science are completely valid within its own field, and that scientific inquiry is the only method of discovering the kind of truth that attaches to empirical experience; but they are still loath to admit that scientific truth is whole or complete truth unless it survives re-examination by the tests that they have been in the habit of applying. Will the last stage come? Will philosophy ever find that many of its problems have been insoluble because its criteria of truth and reality are too narrow, and that they can be solved if these criteria are revised and widened so as to admit all the conclusions and concepts of science to the most complete forms of truth and reality?

IMAGINING AND REASONING

Professor H. WILDON CARR

I WISH to discuss the nature and the relation to one another of two kinds of mental activity, and I can most clearly indicate what they are if I take some illustrations from familiar experience.

Imagine you are walking by a moonlit sea. The ripples sparkle in a broad expanse of sheen, forming a definite triangle, its apex far off on the surface of the water and its base spreading out on each side. As you watch the reflected moonlight you may see some object, say a boat propelled by rowers, move into the gleaming zone and become suddenly bathed in resplendent light. The rowers seem to have come out of the darkness into the light. The moonbeams which before were not falling on them seem now to be dazzling them. You know, of course, for you understand the laws of reflection and of the convergence of light rays, that this sudden illumination of the rowers in your prospect does not correspond with any change whatever in their actual experience, yet you find the illusion practically impossible to dissipate.

Again, imagine that you are in a room the walls of which are faced with mirrors and which is illuminated within. There will be no limit to the visible extension and a very sensible limit to the tactual extension. The phenomenon is familiar enough, and usually described as natural illusion. You know, you think, the exact position of the reflected image, it is reflected from the surface of the mirror, yet you are unable to locate it there or even to think it there, it lies for you somewhere behind the mirror. The visible extension behind the mirror has no counterpart whatever in the real world, yet you cannot by any effort or contrivance destroy the illusion.

Once again, imagine you are observing in a laboratory the projection of a beam of light from an incandescent gas through a prism to a screen. You see the band of the spectrum. Here there is no illusion. You see and can only see the spectrum, but you regard the spectrum as a phenomenon, and the real thing as electronic orbital movements in atoms, which you can never see.

In each of these cases what you objectify is a phenomenon, giving that term the recognized meaning of something existing in nature and not in your fancy, which yet cannot claim independent existence, whatever be its ground or cause, because its existence depends on the observer and his relation to the reality observed. Whether or

not everything we observe is a phenomenon in this sense we need not inquire. It is sufficient for our present purpose that it should be granted that the sheen on the water, the visible extension behind the mirror, the spectrum on the screen, are non-existent in abstraction from the relation of the observer to the real thing, whatever it be.

I want to submit the experience of which these illustrations are typical to psychological analysis.

We shall easily distinguish three factors. First, sensitivity, the passive power of receiving stimuli from without and experiencing them in the form of sensations; it is clear that without the organization of the special senses there can be no experience of phenomena. Second, reason or understanding, an active power of reflective consciousness. Third, imagination, an ill-defined factor, yet necessary if we are to account for the arising of an illusion.

It is the status of imagination which I wish to discuss. It is usually regarded as a subjective activity dependent on the passive power of receiving and retaining sense-impressions, recalling them as memories, and hence of recombining them more or less fantastically. Fantastic association and dissociation are the essence of imagination. It is recognized that imagination may have high æsthetic, intellectual, and moral value in the realm of art; it is what we seek to eschew and banish from the realm of science. We guard ourselves against the imagination; it is the fruitful source of illusion and error.

I am going to defend what to many may appear a paradoxical position. It is that imagination is more original, more fundamental, and more essential a factor in the mental life than sensation or understanding or reason. Were there no imagining, sensing would be meaningless, and thinking would be impossible, for there would be nothing to think about.

Let us see first what the philosophers have had to say on the question. The historical development of the problem in the modern period is most instructive to follow. Here I can of course give it only a brief and cursory reference. When modern science and philosophy arose in the seventeenth century the new method of doubt fixed attention upon the deceitfulness of the senses, and the false apport of the senses was attributed to imagination. Thus Descartes instances the case of persons who have undergone amputations, and still localize sensation in their non-existent limbs. Imagination was regarded generally, by the Cartesians, and also by the empiricists, as a kind of riotous activity to which the mind was subject when not under the control of the intellect. Imagination for them had no positive function and played no necessary part in conscious experience. As mental activity it presented a strong contrast to discursive reason which strives for

clearness and distinctness. Imagination was identified with confused and obscure thinking. Consequently the scheme of human knowledge was: first, impressions of external objects and internal desires and emotions on the senses; second, thinking or reasoning on this sense-given matter; out of which arose, third, the laws of association. This was the full account of mental activity on its theoretical side. Any slackening of the intellectual work led to confusion and obscurity, and this when it took the form of actual illusion was represented as the active work of a lively imagination. Yet even this lively imagination was an illusion, because imagination for them was an absence, not a presence. In sleep, for example, when the senses are closed to the external world, and the animal spirits, according to the theory then held, are coursing through the brain, reviving traces of past impressions, and under no control of reason, we have the illusion of dream. Imagination was identified with this negative reality of the dream state.

Kant was the first in the line of the historic philosophical development to discover that imagination is not the name for uncontrolled intellectuality, but a positive factor with its definite place in the scheme of knowledge, an activity *sui generis* in the formation of experience. It is curious and instructive to see how Kant was led to this discovery. Imagination is invoked by him in the *Critique of Pure Reason,* in the transcendental æsthetic and in the schematism of the categories. In the transcendental æsthetic he shows how the definitions, propositions, and operations of mathematics, though purely ideal in form, are yet wholly dependent on sense imagery for content. The logical understanding cannot get to work without the aid of the æsthetic imagination. In the transcendental analytic he shows how the concepts of physics in the pure forms of the categories of relation—substance, causality, reciprocity—are dependent on the imagination for the subsumption under them of the sense-matter of the universe. He was led to the important distinction between the reproductive and the productive or creative imagination. The reproductive imagination is the simple projection forward into the future of imagery recalled from the experience of the past. It differs from memory in being anticipation, not recollection. The productive imagination is that which gives shape, figure, objectivity to the manifold of sense. It creates, in fact, what the Gestalt psychologists now distinguish as *Gestalten.* This recognition of the imagination as a creative activity at once led to a differentiation of the realms of art and philosophy, and the first result of this new direction of mental science is the æsthetic theory of Kant's *Critique of Judgment.* It is not, however, till our own day that we have in the work of a contemporary philosopher, Benedetto Croce, the theory of the autonomy of imagining and

imagination as a distinct moment in the life of the Spirit. The æsthetic activity, creative of images, is in the theory of Croce the pre-condition of the logical activity, creative of concepts.

Let us turn from the philosophical aspect of the problem to the scientific. How would the psychologist in the interest of his science analyse and interpret an experience such as we have instanced in our three examples? The psychologist approaches his problem unencumbered with any assumptions or inferences of metaphysical causation. Whether he be a behaviourist or an introspectionist, reality for him is psychical experience in its immediacy. His one interest is to discover by analysis the data of consciousness and the factors which constitute experience. Two kinds of psychical elements are easily recognized and readily distinguished, sensations, the æsthetic manifold; and percepts, images or ideas, the logical or intelligible manifold. To these the subject of experience is passive or receptive, he responds to them in thinking and acting.

We are guided in our psychological analysis by the science of neurology. We know the mechanism of conscious action. The organism of a conscious agent is a sensori-motor system of reflex arcs, at one end of which is a sense terminal, at the other a muscular contraction. The nervous system is an integration of innumerable individual unit activities. On the psychical side this is experienced as sensations, a manifold of individual sense-impressions, transitory and unrelated existences, which are retained in memory, and can be recalled after they have ceased to exist, though in a different form, as images or representations. The neurological processes are mechanical and automatic; the psychical processes which accompany them appear to be dependent on them, and yet at the same time their whole significance depends on their autonomy. No one, so far, despite the most heroic efforts, has been able to impart intelligibility into the proposition that the brain thinks. The only thing the materialist can affirm, basing his appeal on facts, is that where there is no brain there is no thinking. The behaviourist indeed goes farther than the materialist, and denies that thinking or feeling is the product of any material or spiritual organ, whether we call it brain or mind. The mechanisms of the organism which result in actions, and the discursive thinking which results in ideas, are, he holds, not two distinguishable processes, but one and identical. They are two ways of regarding a single sequence of events.

The most effective criticism of the behaviourist theory came from Mr. Bertrand Russell in his *Analysis of Mind*. It would be tenable, he declared, were there no images. By images Mr. Russell seems to have meant memory images, and not perceptual images, not what are now called *Gestalten*. The argument was that a double-aspect theory of mechanical movements and psychical processes is

rational if there be the possibility of a point correspondence between the constituent movements of the mechanism and the constituent processes of the psychism, and such correspondence is easily predicable of sense-data; but images are not sense-data, and they enter positively into the psychical situation, while what may be thought of as having corresponded with them on the physical side cannot be thought as existing in any meaning which physics can admit. The argument would have had still greater force had it been applied to *Gestalten*, to perceptual as well as to memory images.

We are brought then to the main problem. What are images, and what is the imagination which creates them? Images are not peculiar to human nature. The experiments of the Gestalt psychologists have shown that they have a place in the animal mind. They are an essential element in conscious activity wherever we meet it. It is imagery, not sensation, which determines any particular situation. It is imagination, not sensation, which creates the visible extension behind the mirror, the sheen on the water, the colours and bands of the spectrum. Images are pictorial and integral. If they present or represent an object or a situation they present it in its entirety. Suppose, to take an example from common life, you are invited to breakfast. There comes up in your mind an image which may include the odour of coffee and the sound of frizzling bacon—these are or have been sensations, and the image of breakfast may recall them; but it is the image, not any particular sensation or group of sensations, which will determine your response and govern the disposition of your action. What is true of the image of breakfast or of the breakfast table is true of the image of the world itself which is part of our daily consciousness. Our world is an image, and imagery is inseparable from our world. Without it we could not act continuously or experience the perfect unity of the real.

Psychologists have always thought that the image is composite and compounded. Following the principle that there is nothing in the understanding which has not been in the senses, it has proceeded as though its task were to construct the image artificially, or discover the natural process of its construction, out of what alone exists, the stream of transitory sense-impressions. The associationist psychology explained images by the laws of association, similarity, and contiguity. Images were thought to be no more than an aggregate or assemblage of sensations, and their variety and diversity were attributed to the fact that sensations of one kind are successive, not simultaneous. The traces therefore of past impressions are revived as idea, and associated with new impressions. By these associations judgments are made and concepts created. Images appeared therefore as the product of judging or reasoning

on sense-impressions, themselves irreducible. Conscious experience was accordingly resolved into a manifold of impressions on a sensitive organism and an integrating activity. What we have now discovered, and the Gestalt experiments have confirmed, is that images are more original than sensations, and imagining is more fundamental than feeling or judging. How are we to rationalize the paradox? The reply is by a philosophy of the organism.

I say a philosophy, not a science of the organism, because in philosophy we can employ a finalistic method which in science, at least in its narrower meaning, is rejected. We can ask in regard to living activity the question which Kant asked in regard to knowledge: What are the *a priori* conditions of its possibility? Still more specifically, surveying living activity in its full extent we can inquire what are the needs of the organism which consciousness alone will enable it to meet, and we can deduce therefrom the nature of consciousness itself.

Living activity is individual, and every individual enters on its life history with a nature preformed and predestined to a definite range of activity. It comes into existence fitted in advance to respond to definite stimuli with appropriate action. It obeys an inward urge to express its nature in the conditions which favour that expression. Consciousness in a living creature appears as sensitivity to stimulus, which takes the form of feeling and enlightenment or understanding. Feeling and understanding are the directing forces in the forming of its actions. Consciousness varies in kind and in degree and in mode of expression, yet it is always relative to action and directed to the conservation of the individual or racial life. Consciousness appears the very essence of life, the terms are often synonymous, and yet life seems everywhere to dispense it with a strict economy. In the vegetable world individual natures express themselves without calling it in aid. The conditions of plant development depending on the fixation and immobility of the individual require it to imbibe its nourishment from the soil in which it grows and the atmosphere in which it breathes. Consciousness would not serve it, indeed it would be a handicap, and if we suppose consciousness to exist in right, it is suppressed or inhibited in fact. In the animal world, on the other hand, the free mobility of the individual makes consciousness in some degree a necessity of existence. Yet everywhere it seems proportional to the particular need. The purpose it serves is obvious. It enables the individual to form and carry out the actions which are appropriate to procure it food and maintain its existence. Wherever consciousness exists, it is one with the activity of the individual who possesses it. This discernment of the purpose of conscious activity enables us to determine its form *a priori*. We

can, that is to say, put to ourselves the question, what are the *a priori* conditions of the possibility of consciously directed actions? At once we see that the first condition is that the situation shall be present to the mind of the individual in imagery. How otherwise could it act? Try to imagine, for example, an individual sensitive to the pain spots of the skin and to nothing else, and able to perform the reflex muscular actions which they originate, how could it direct its actions to purposive relief unless it could imagine? It might react to stimulus by movement, but it could not direct its actions. For this it must imagine. What is it to imagine? It is an activity *sui generis*. No sort of sensitivity to pain spots could generate images of needles and pins, sharp stones or thorns, and point the way of escape from them. And no combination or succession or aggregate of pain impressions could compose an image or provide material to thought. Certainly no thinking about pain impressions could generate the concept of an external cause. For conceptions there must be imagery.

Everyone recognizes that the perceptual world is the condition of the conceptual world. The perceptual world is the world of sense imagery. This imagery is not created by thinking in the logical meaning of the term. There is then an activity logically prior to thinking and its condition, an activity of imagining which gives us the perceptual world. Out of what then does the imagination create its images if not out of sense-impressions? What is the nature of its creation? A creation out of nothing offends the principle of intelligence itself. We have no need to resort to any such absurdity. For our answer we have only to turn to the living world. Every individual is born with a preformed nature, and its life is the unfolding and development of this nature in response to the external conditions which favour its development. The creative force is the dynamic character of the life principle itself. Wherever the expression of this life principle is conscious, it takes the form of an opposition between what is latent within and kinetic without. In more familiar phrase, consciousness must assume the form of a subject-object relation. This relation is not the external connection of independent existences, that is, it is not a relation of mind and nature each postulated as self-existent. It is a relation of polarity in which each factor derives its whole meaning from its opposition to the other. Take any living conscious creature in the first moment of its individual life, its nature consists of possibilities, latent and unexpressed, and its life activity consists in the continuous expression of this nature. The living activity which unfolds itself is *expression*. This expression we know as *images*, a form of knowledge quite distinct from sensations and from concepts or ideas. Images are particular, they are as private as sensations. The artist

can give them extrinsic form, fixing them as it were in material, making tones, colours, plastic shapes become language, but the image exists only in the mind. The imagining power of the mind is therefore freedom to express, but what it expresses is determined by intuition, that is by its nature, which is the whole inherited past. The natural urge of every creature is towards expression. Nature exists as intuition, and intuition finds expression in imagery. This agrees with the fact that images are particular and characteristic of the individual and the species, and yet not arbitrary. The very fact that the imagination is capable of riotous extravagance shows that normally it is under the strong control of the organism. The fantasies of Don Quixote have the same origin as the commonplace imagery of Sancho Panza. This imagery is not generated by feeling or by thought, but by the life itself; and this activity of imagining is not a sensing or a reasoning, but an activity of æsthetic creation. This is the conclusion to which a philosophical analysis of experience must lead.

Let us now try to appreciate the scientific import. The Gestaltists have proved by their experiments that in all cases of recognition what is identified is not a sensation or aggregate of sensations but a shape, and like the ghost of Hamlet's father "a questionable shape." Can we conceive any way by which a shape is generated out of sensations and associations? Are shapes facts or fancies? If they are facts, it seems as though we must resolve them into the only things psychology has recognized as fact—sensations and their associations. Sensations are facts because we can correlate them with organic stimuli, and associations are facts because we can represent them as real relations. Images, shapes, *Gestalten*, come under neither category. If they are facts, not illusions, they must fall under a distinct category. We must recognize that imagining is a mental activity distinct alike from feeling and thinking, with an objective product, images, distinct alike from sense-impressions and ideas. In the mental life sensations are the occasion of the evoking of imagery not its cause, and images not sensations provide to thought the matter of its concepts.

To return to the examples of imagining from which we set out, the sheen on the water, the extension behind the mirror, the band of the spectrum—these are subjective appearances with absolutely no objective counterpart. They are shapes or images which do not exist in the objective world we *conceive* as Nature. The light which we conceive as radiant energy does not itself reveal the world of shapes and images to privileged souls. Like God's rain, it falls on the just and unjust. It is by the active principle of life itself that we must interpret the shape or image which gives to each individualized form of its activity the world of its effective action.

RIGHT AND GOOD:
CONCLUSION—THE LIMITS OF ETHICS

Professor W. G. DE BURGH

I

The two basic forms of action distinguished in the preceding articles, viz., moral action, where *praxis* is for *praxis'* sake, and action for a good, where *praxis* is for the sake of *theôria*, are found in close relationship to one another in human life. The part they play is rather that of abstract moments in a practical process than that of self-contained and isolable bits of conduct. No philosopher is likely to discount the importance of thus analysing the concrete into its factors before he rectifies the abstraction by showing how they co-operate in actual experience. In any individual biography we can find acts and courses of action in which duty is the dominant motive, and others in which the dominant motive is desire of good. Similarly, when we compare different biographies with one another, some exemplify most strikingly the struggle for righteousness against unruly passion, others the spontaneous aspiration of the soul to attain the goal of its desire. But neither the moral law nor the *summum bonum* wields an exclusive sovereignty. St. Paul and Luther, in their warfare against carnal desire, drew strength from the ideal vision; nor were St. Bernard or Spinoza, for all their absorption upon union with the divine, strangers to the call of moral obligation. In the lives of ordinary men, the types of conduct are, perhaps, more evenly balanced; yet here also the distinction is discernible. Moreover, it is easy to see how, despite their intrinsic difference, they come to be associated and "by just exchange" to effect a mutual enrichment.

(*a*) We have already noted that habitual right action and the character fashioned thereby are pronounced "morally good," by the agent himself or by a spectator, passing judgment theoretically after the event. Thus, when a courageous act, done *ex hypothesi* from sense of duty in face of strong natural fear, without thought of any ulterior end, is envisaged as "good," the result is not merely to strengthen, as all discharge of duty necessarily strengthens, the man's power of moral volition, but also to furnish an additional motive for like actions when subsequent situations call for them. He will desire to act bravely, because he knows the worth of brave action in the fashioning of good character. Duty thus acquires a

certain sweetness in the doing. On the other hand, there is obvious peril in such concentration on the goodness of dutiful action. If it should provoke to the thought "How good I am to do my duty!" or even "How good a thing it is to do my duty!", it gives a handle to the most deadly sin to which the moral life is liable, self-complacency. The moral man needs to guard sedulously against acquiescence in the cherished code. His protection lies, as Kant saw, in the realization that the command of duty, to will perfectly, surpasses all endeavour after its fulfilment. Only so long as "my station and its (finite) duties" is taken as the be-all and end-all of morality is the door left open for self-satisfaction.[1]

(*b*) So, again, there is a natural transition from action *sub ratione boni* to the idea of moral obligation. The higher and more remote the goal of desire, and the clearer the recognition that thirst is not to be quenched save in the fruition of a *res infinita et æterna*, the steeper is found to be the path leading to its attainment. It grows steeper and steeper all the way. There will thus be many stages in the ascent when, despite enrichment of ardour in aspiration and of insight into the desired good, the will is beset by the allurements of transitory satisfactions and falters in its freely chosen purpose. There are times without number when the artist or the scholar, however absorbed he be in devotion to his calling, finds his spontaneity in abeyance, and has to revive a flagging energy by appeal to the authority of the moral law. At such moments the clouded insight needs to be clarified by the reminder that it is a moral duty to be faithful to the vision of the good. Dutifulness comes into play, as a motive to particular actions, within the general scheme of a life dedicated to love of goodness. For it is not only moral goodness, but goodness in every form, as beauty or knowledge or love, that is a possible source of moral obligation There are, indeed, other sources, besides the promotion of good, *e.g.* a promise made in the past, which are fruitful in generating duties. Nor do any of these general *prima facie* obligations serve as a complete explanation of the obligatoriness of a particular concrete duty.[2] Moreover, the duty when recognized commands obedience as an end in itself, independently on the good it bids us realize. The co-operation of love of good and duty may be illustrated by a familiar example, that of a mother's relation to her child. Normally the motive of maternal affection suffices to secure action for the child's welfare; nor should we wholeheartedly commend the mother who needed habitually to remind herself that its promotion was a moral duty.

[1] It may be added that duty itself, as we shall note presently, enjoins (amongst other things) promotion of good.

[2] On these *prima facie* obligations, see Ross, *The Right and the Good*, ch. ii, pp. 19 ff.

Yet in the not infrequent cases when the natural affection errs either by excess or by defect, the principle of duty (always supposing that it has been trained by exercises in other relationships) is ready to spring into conscious activity, as regulative of a strong but capricious impulse. Further, the natural affection itself is refined and ennobled by the discharge of duty in other fields of life. There is an underlying unity in human personality which, despite real differences of activities and interests, precludes severance into water-tight compartments. A wide gulf separates the display of maternal affection at the level of what is almost animal instinct from the wise and beneficent love that bears the impress of reasoned thought and moral habituation. Lastly, the moral motive is often found in association with other motives, such as love of beauty or personal affection, prompting to one and the same act. Kant was in error in holding that an act had value only when done exclusively for duty's sake. The *moral* worth, it is true, depends solely on this motive; but, as we have seen, moral worth is not the only kind of worth; and the value of an act, prompted by love in conjunction with a sense of duty, is enhanced, not diminished, by what Kant would regard as its "impurity."[1]

II

We turn next to the religious life, not to discuss its credentials or its value, but simply to define its relationship to morality, and its yet closer relationship to the pursuit of the good. For the present purpose, therefore, we shall assume that God, the object of religion, is a genuine reality; and, further, that the experience of God in religion is an experience *sui generis*, distinguishable from other specific types of experience, such as art, science, or morality. Religion differs from these alike in the peculiar nature of its object and in the nature of the response which that object provokes in the human subject, viz., worship. The question of the origins of religion from experiences that were non-religious does not concern us.[2] We shall consider religion in its richest known expressions, not as the

[1] See Dr. Ross's interesting remarks on this question (*op. cit.*, concluding chapter, pp. 168–173). He criticizes the term "mixed motives," substituting "the co-operation of elements to form a single motive." He would, of course, reject the limitation under which in these articles I have spoken of "moral worth."

[2] See Alexander, *Space, Time and Deity*, Bk. IV, ch. ii, *init.* "Various emotions enter into the full constitution of the religious sentiment—fear, admiration, self-abasement—but its distinctive constituent is the feeling of our going out towards something not ourselves and greater and higher than ourselves, with which we are in communion, a feeling whose object is not that of any of these subsidiary or suggesting emotions, nor of any combination of them" (vol ii. p. 373).

crude feeling after God of those races which, in our ignorance, we call "primitive," though the so-called primitives were in fact already far advanced on the path of human development. If we touch for a moment on the historical, it is to note the parallelism with the successive stages in the history of the two other types of life with which we have been occupied. There is (1) a pre-religious stage, when the sense of the occult and aweful is directed not upon a concrete deity, but upon a mysterious impersonal source of power, provocative of dread rather than worship.[1] On the properly religious level, we find (2) a succession of stages, theriomorphic and anthropomorphic, which may be gathered together under the rubric of polytheism, the worship of local and finite gods, culminating in monolatry, *i.e.* the exclusive worship of a single god by a given tribe or nation, while the gods of alien communities are yet recognized as real.[2] The advance from polytheism and monolatry to (3) monotheism is conditioned by the intimate association of religion with the growth of intellectual inquiry and/or of the moral consciousness. Among the Greeks, as we see in Plato and Aristotle, science and philosophy issued in the formulation of a monotheistic postulate; God, defined as the Good self-moving Soul or as the First Mover being required to "save the phenomena" of motion in nature. Among the Hebrews, a people who, in antiquity at all events, were innocent of any scientific curiosity, the belief in one God, the Creator and righteous Governor of the whole world, was the fruit of the soul's travail in prolonged and bitter ethical experiences. In the higher religions of to-day monotheism has been permeated through and through by both the speculative and the ethical inheritance of mankind. The religious life is, in principle, the response of man's whole personality; of his intellect, his emotions, and his will, to the presence of the One individual and transcendent source of being and of value, the *A* and the *Ω*, who is at once the sovereign reality and the sovereign good.

What then is the relation of religion to human action? We have to remark, first, (1) that while religion always implies a rule of

[1] The "numinous" object is not necessarily an object of worship. Any object of experience may arouse the sense of numinosity. We find it surviving, in civilized mankind, in the eerie feeling provoked, say, by a graveyard at night. For Kant, again, not only "the moral law within," but the sublime in Nature ("the starry heavens above"), were charged with the numinous. A like impression would be produced by the magnificent and heroic in human personality and action, *e.g.* by a Cæsar or a Goethe, or the spectacle of Nelson bringing his fleet into action at Trafalgar, entirely apart from any religious, or even ethical, relevance. The cult among certain Hindus that gathered around John Nicholson after his death illustrates the transition to religious worship.

[2] The recognition by the Greeks of a mysterious impersonal power (Atê Moira) behind Zeus may be regarded as a dim recognition of the inadequacy of any finite conception of the Unconditioned.

conduct, it is never merely practical. On the one hand, it controls men's actions, in that it (*a*) enjoins religious observances and acts of worship, (*b*) requires obedience to the will of God in every expression of human will, and (*c*) arouses in the worshipper a desire for self-discipline and purification to fit him for the life of communion with the divine. But in religion, as in the endeavour after the Good, *praxis* is a means, and not an end. Religion begins and ends in vision (*theôria*). From the outset it imparts a revelation of truth, which generates an outlook upon life, couched, it may well be, in naïve and fragmentary imagery, but capable of ripening into a theodicy, which, like that of the *Divina Commedia*, appeals to the developed intelligence. Religion, as we have said, claims to direct and to satisfy man's whole nature, and especially the desire of the intellect for speculative truth. Moreover, its goal lies in the fruition of the *visio Dei*, a theoretical activity wherein labour is quieted in rest, and desire in the love that springs from knowledge of the sovereign Good. Even for the saint *in viâ*, the highest activity is the contemplation of God, so far as this is possible under this-worldly limitations. Once more, the very practical mission of religion requires a knowledge that is more than a working creed. Sin cannot be conquered by mere discipline, but only by a vision that involves ascent from *praxis* to *theôria* of the object that stirs to regeneration. This is evidenced not only by the history of Christianity, which from the first ages appropriated to its practical purposes the rich inheritance of Greek philosophy, but by that of Buddhism, the chief missionary faith of the East, which, though initially indifferent to speculative problems, developed naturally, in the five centuries succeeding its foundation, both a theology and a metaphysic. No religion that is true to its vocation can tolerate the subordination of theoretical to practical values. To ignore the claim of reason means for religion among civilized peoples a sure and speedy death.

Secondly (2), religion implies belief in the reality of its object; the primary *credendum* is existential, not an "ought" but an "is." The distinction of ideal and real, of value and fact, which, as we have seen, constitutes the unsolved antinomy of moral experience, is transcended in that of religion. For religion the ideal is God's will, present in the life of the many members of the invisible community, "in which, through faith for them, and for God we do not know how, the bad self is unreal."[1] We cannot here discuss the manner

[1] Bradley, *Ethical Studies*, p. 231; cf. the concluding chapter, and especially p. 331. "Faith involves the belief (1) that the course of the external world, despite appearances, is the realization of the ideal will; (2) that on the inner side the human and divine are one. Or the belief (1) that the world is the realization of humanity as a divine organic whole; and (2) that with that whole the inner wills of particular persons are identified. Faith must hold that,

of the solution offered by religion, and in particular by Christianity, with its doctrines of grace, justification, and atonement. It must suffice to indicate the bridge that affords a passage from morality to religion, a bridge which can only be constructed, if at all, from the side not of morality but of religion.

We are now in a position (4) to define more precisely the relationship between the life of religion and that of moral duty. On the less developed levels religion often appears dissociated from morality; its practical observances may scarcely touch the ordinary business of life among its worshippers, and may in certain particulars enjoin actions which would be condemned as immoral by the contemporary ethical code outside the religious pale.[1] But the higher religions are one and all ethical; the conduct they enjoin is, morally, in harmony with the highest moral convictions of the community. John Stuart Mill, for instance, claimed that the Utilitarian ethic was in entire accord with that of the New Testament. This assimilation of morality by religion operates in two directions. On the one hand, God is ethically qualified, not only as a God who loves righteousness and hates iniquity, but as a God who is Himself righteous, or, rather, is very righteousness. It is true that the ascription to God of "moral attributes" involves the use of analogy; God is moral *eminenter, i.e.* in a uniquely eminent way, and His goodness is divine goodness, transcending not only in degree, but in kind, the creaturely goodness of men. As Aristotle said long ago, it is absurd to speak of God as doing His duty in human fashion, or as exhibiting the virtues of temperance or courage in the manner of the good citizen of the Greek city-state. On the other hand, men's moral duties come to be regarded as divine commands. This is so at each stage of moral and religious advance; finite duties are ascribed to the will, now of finite gods, now of the one infinite God; and the recognition of God's unity in monotheistic faiths heralds that of the unconditionality of moral obligation. Yet, despite this intimate association, the difference remains. How else can we account for the fact that in all ages the saint has sought and found a welcome amongst publicans and sinners, while the moral Pharisees of his generation have proved his bitterest foes? No one will dispute that a man may be highly moral without being in the least degree religious; it is equally true that those who are keenly sensitive to God's presence may be afflicted with lack of

in Biblical language, there is ' a Kingdom of God,' that there is an organism which realizes itself in its members, and also in those members, on the subjective side, wills, and is conscious of itself, as they will and are conscious of themselves in it."

[1] Cf. Whitehead, *Religion in the Making*, p. 37. "Religion is the last refuge of human savagery. The uncritical association of religion with goodness is directly negatived by plain facts."

self-control and moral blindness.[1] The religion of these last is doubtless defective as religion; but to deny it the name of religion would be to shut our eyes to palpable facts. Again, the *praxis* of the converted sinner, even though it be that of a saint, is wont to be marked by an unconventionality, especially in a predilection for other sinners who are unconverted, that outrages the conscience of the man who lives by mere morality. It seems that moral conduct, without ceasing to be moral, is raised to a higher plane when it has been informed by the spirit of religion. "God," said Richard Hooker, "cares a great deal more for adverbs than he does for verbs." Only those who deny that the motive is relevant to the rightness of an action can be blind to the difference in the quality of conduct when inspired, not merely by the motive of duty, but by the desire to do God's will and to live for His glory.

> All is, if I have grace to use it so,
> As ever in my great Task-master's eye.

The point was made, with his customary lucidity and precision, by St. Thomas Aquinas. Moral excellence, he held, was attainable by man by the natural light of reason, without the aid of the Christian revelation. The virtuous pagans were evidence for that; and Aristotle's *Ethics* sufficed as the expression of its theory. Christianity supplemented this self-contained morality of Reason in two ways. First, it revealed the three theological virtues, faith, hope, and charity. Thus much by way of addition. But, secondly, the influence of revelation and divine grace was manifested within the field of rational morals, in that it transfigured the four cardinal virtues of prudence, temperance, courage, and justice, by raising their practice to the plane of *virtus infusa*. What is noteworthy here is that religion effects this enrichment and ennoblement of morality, not so much by explicit ethical teaching, as by the new spirit breathed into the human soul by experience of the divine presence. It was not by enunciating a moral code, but by the regenerating influence of personal contact, that the Founder of Christianity revolutionized the lives and practice of His followers.

(5) The affinity of the religious life to that directed towards the Good is much more intimate. For in both *theôria* is dominant over *praxis*; both have their source in spontaneous aspiration after an object of desire, and their goal in fruition of an ideal Good. Indeed, religion might be subsumed under the life *sub ratione boni*, but for

[1] See Alexander's remarks on this, *Space, Time and Deity*, vol. ii. pp. 404–405. He insists that it is wrong to "call such persons hypocrites, because their life seems incompatible with their religion," and adds that "there is no good reason to doubt the sincerity and strength of the feeling towards God which they have."

two reasons: (*a*) that the scope of religion is not limited to practice, even though the practice be for the sake of vision; and (*b*) that in religion the *summum bonum* is identified with God. This last is the more serious ground for their differentiation as types of life. The distinction is obvious at the stage where religious worship is directed to a plurality of finite gods and action to a plurality of finite goods; though even here there is association, in that the goods in question are regarded as gifts of the gods, and arouse gratitude and love in the recipients. It is when men have come to recognize that the *summum bonum* must be sought in a *res infinita et æterna* that identification of the Good and God is naturally suggested. But, just as in the case of the identification of the Moral law with God's eternal will to Right, the passage implies a *salto mortale* into the realm of religious faith. The history of Platonism furnishes a striking illustration. In Plato God is not the supreme reality or the ultimate source of value. He creates the sensible world in the likeness of the Forms, and for the sake of the Good. But He is not Himself the Good; He is not a Form, but a soul; the sovereign reality and value is the Form of Good, which is the object of God's rational contemplation. With the growth of the religious consciousness in the closing years of the pre-Christian epoch and the first centuries A.D., this severance of God from the Good was felt to be a stumbling-block, and Neo-Platonism revised the Platonic doctrine by interpreting the intelligible world as a trinity in unity of divine substances and the Forms as the thought-contents of the divine intelligence. The identification of the Platonic Good with the God of Theism was finally effected when Christianity, through the mediation of St. Augustine, appropriated the Neo-Platonic legacy. Faith in ideal goodness, therefore, may incline to, but does not necessitate, faith in God. There are many thinkers to-day who, holding to the former but rejecting the latter, bear witness to the reality of the distinction between the life *sub ratione boni* and the life directed towards God. They occupy a position in this matter midway between those who regard the *summum bonum* as an *ignis fatuus*[1] and confine their quest of goodness to the sphere of finite goods, and those who, realizing that the *summum bonum* nowhere exists in the temporal world, seek—and find—it in the sovereign of the other-worldly order, revealed in the experience of religion.

(6) Thus the two types of practical life present a problem, insoluble by ethics, which religion claims to solve. Stated in philosophical terms, it is the problem of the synthesis of fact and value. Not that the severance is absolute even within the ethical field.

[1] E. F. Carritt, *Theory of Morals*, p. 74. Is it probable that the goal followed unanimously by philosophers for more than two thousand years should prove a mere hallucination?

For there we find (*a*) that goods are actualized in living persons, in the scientist who wins knowledge and knows that he knows, in the artist who creates and contemplates things of beauty, in the moral agent who labours consciously to do his duty, in the lover whose life is motived by the vision of good. Even imagined good can only be thought as good for a possibly existing subject. We find, again, (*b*) that the actual course of events is such that goodness is realized within it, not as a mere thought-interpretation superimposed by the mind upon given fact—for barely given fact is never forthcoming—but as a character of the real. On the other hand, the ideal implied in all actual valuations is, of necessity, imperfectly realized in them; what we call the "actual" is a process of becoming, which, as Plato saw, lacks the stability of true being and is therefore never fully "actual." Our value-judgments thus present a struggle or tension of two moments, the temporal and the eternal, within human experience; a struggle whose issue cannot be decided within the limits of the spatio-temporal order. We are led to the thought of an other-worldly reality, a thought which, apart from religion, remains a mere thought—in Kant's language, a regulative Idea—a "value" standing in irreconcilable contrast to the "facts" of this-worldly experience.[1]

III

We come, finally, to the question of the diversity of values. The problem is not that of pluralism within each of the main groups of valuable objects, *e.g.*, whether there is one ultimate truth or a plurality of ultimate truths standing side by side in irreducible togetherness (Herbart); whether, again, a single type of beauty is displayed in common by the creations of the several arts; and whether intrinsic goodness is to be discovered in one Good only (as for Plato) or (as for Dr. Moore in *Principia Ethica*) in a multiplicity of goods. Our concern here is with the diversity of standards or ideals, and particularly with those of Rightness and Goodness. Each, as we have seen, is one and infinite in *suo genere*. Are the *genera* finally distinct? "Beauty is truth, truth beauty," wrote John Keats, and added, "that is all ye know on earth, and all ye need to know." We need in fact to know a great deal more. Certainly it is not "on earth" that these measures, as the poet claims, lose their differences in identity. It may be true that a man stabbed his paramour in Brazil yesterday, but the knowledge of the event, for all its truth, is neither beautiful nor good. Croce may have erred in demarcating too rigidly

[1] On this whole question see Sorley, *Moral Values of the Idea of God*, pp. 139 ff.; and A. E. Taylor, *The Faith of a Moralist*, vol. i. ch. ii and *passim*.

the several activities—theoretical and practical, æsthetic and logical, economic and ethical—of the human spirit; but the differences on which he insists are very real. We may note, in passing, that it is incorrect, as Professor Taylor has recently pointed out, to speak of truth as a "value."[1] What has value is not truth, but the knowledge of it in the mind of a knowing subject. Our question, then, is whether knowledge of truth (and all *knowledge* is true knowledge), beauty, love, rightness, goodness, are, not indeed reducible to one another, but specific variations on a single ultimate standard. Four considerations may be urged as pointing to the possibility of such a synthesis.

(1) It is the nature of reason to seek unity in experience and not to rest till she has found it. That the unity is there for the seeking is the faith of metaphysic, its "substance of things hoped for," its "evidence of things not seen." Ideals claim to fall within the real, and a bare togetherness of external relationship would spell irrationality at the very heart of reality. Doubtless Pluralist philosophers —and such abound to-day—will disparage this *credendum*, and echo Dr. Moore's epigram, that "to search for unity and system at the expense of truth is not, I take it, the proper business of philosophy, however universally it may have been the practice of philosophers." This statement, however, begs the question; only on the assumption that truth is pluralistic is there any possibility of such a sacrifice. It also involves an *ignoratio elenchi*. In metaphysics an article of faith is not a dogma. It remains what Kant called a "regulative Idea," *i.e.* a lode-star of intellectual inquiry, awaiting confirmation by the facts.

(2) There is further a practical motive for seeking a single standard of value. Human lives fall into groups according as they are directed towards one or other ideal end. A man has to choose, within limits, the sort of life he means to live, and his choice will involve selection among measures of value. No man can pursue all forms of goodness equally or all at once. One will rate beauty above moral goodness, another moral goodness above knowledge, a third will subordinate all three to the glory of God. How can a man decide which form is the highest if he cannot measure all alike by a single sovereign principle?[2]

(3) We have seen that value attaches not to abstract concepts, but to concrete existents, possessed of life and mind. Now, personal life is displayed at various levels of development; and advance from a lower to a higher level is marked by increased unification, both of self-hood and of the object-world. In the case of finite personality this process of unification is never complete, either on the side of the subject or of the object. But analogy points to the ideal of a perfectly unified experience, in which the knower and the known reality alike display the form of coherent system in the richest

[1] Taylor, *The Faith of a Moralist*, vol. i. p. 39.

[2] See Sorley, *op. cit.*, pp. 52, 53.

variety of content. If the unification be all-inclusive, it should embrace standards of value as well as other constituents of the real.[1]

Lastly (4), if the claims of religion be admitted, the problem which remains undecided for metaphysic receives a definite solution. God, if God there be, is the source alike of all that has being and of all its value. Religion is an illusion, unless the object of its worship not only enjoys the possession of beauty, knowledge, and goodness, but Himself *is* these things, and is them in undivided unity. That God is not merely *bonus* but *bonitas* was a familiar tenet of the mediæval schools. In the unity of His being all measures of value find their unity; "beauty is truth, truth beauty," in God, and in God alone. Therefore rightness and goodness also fall together in the being of God. The moral Law is thus conceived, inadequately, but at the farthest bound of human thought striving to fathom the divine nature, as the expression of His eternal Will for Right. What God wills is the *really* Right, ever adumbrated in men's judgments of rightness, yet ever eluding their grasp (*Begriff*); a Right which is no arbitrary *fiat* of a capricious sovereign, but the perfect enactment of God's vision of His own Goodness. For the religious consciousness, this solution of the problem of diversity of ideals lies ready to hand. For metaphysics, however, it is otherwise. The assurances of religion are not demonstrable, nor can its "immediate experiences" of God be accepted by philosophy at their face-value. Like all other claimants to immediacy, they must subject themselves to the scrutiny of speculative reason. On the other hand, since they proffer a solution of questions which ethics is bound to raise and to leave unanswered, they are claims of which any serious philosophy must take note. That is why they have been referred to here. But the inquiry into their validity is another story, which lies beyond the purview of these articles.

[1] See Taylor, *op. cit.*, vol. i. pp. 101 ff.

(*Concluded*)

HYPNOTISM AND SUGGESTION[1]

WILLIAM BROWN, M.D., D.Sc.

In any consideration of the nature of suggestion we cannot omit reference to the extraordinary and startling phenomena which may sometimes be observed in hypnotized subjects. But it would be a mistake to look upon hypnosis as something uncanny, mysterious, and occult. Although we have even yet no thoroughly satisfactory theory of hypnosis, we understand it in general terms, and can bring it into line with other facts and phenomena of psychology known in everyday life. The hypnotic subject, and the phenomena of hypnosis, can be explained firstly in terms of mental dissociation, of the tendency for certain forms of psychical activity to occur independently of the rest of the mind, independently of other considerations; and, secondly, in terms of suggestion, of increased suggestibility. And these two, the phenomenon of dissociation and the phenomenon of suggestibility, are not unrelated to one another. They are related, but not to the extent of being identical with one another. It was the Nancy School of Hypnotism, led by Bernheim, who considered that hypnosis could be explained in terms of suggestibility. Charcot had previously explained hypnosis as an artificial hysteria—as a dissociation of the highest levels of the nervous system, a dissociation of mental and physiological activity at the higher conscious level. But the theory I am trying to sketch is the theory that combines both these statements. In my own view, based on the study of many hundreds of cases, hypnosis is explained both by dissociation and by increased suggestibility. We certainly do find increase of suggestibility occurring, partly explained in terms of dissociation, but not entirely so. On the other hand, the dissociation in its more pronounced forms may show itself independently of suggestibility. Which is the cause and which the effect of these two? Dissociation as a cause may bring with it increase of suggestibility. We can understand why that should be so. Does increased suggestibility on its side bring dissociation? It may tend to do so. A person who is in an increasingly suggestible state responds to just the one stimulus before him—it may be a stimulus from the outer world, or an idea aroused in his mind by the experimenter. He responds with his whole mind and strength to the

[1] Being part of a paper on "The Self: Psycho-Analysis and Psycho-Therapy," read before the Church Congress, Newport, Mon., on October 8, 1930.

suggestion, and that concentration in one direction may be considered to cause collateral suppression of other modes of mental activity, which may otherwise occur simultaneously or immediately afterwards. And that suppression of collateral mental activity may be regarded as a precursor or cause of a certain kind of dissociation. If a patient is so fixed on what the hypnotist is saying and suggesting that he is oblivious of everything else, it would not be surprising if later on, when his attention to the hypnotist is relaxed and the rest of his mind, the other powers of his mind, have sway once more, the memories of events that occurred during hypnosis would be absent. That is the tendency in deep hypnosis—for the person to forget completely the incidents of the hypnosis afterwards. In cases of artificial somnambulism, or what I call real hypnosis, the patient wakes up from sleep with no memory of what has occurred. We find that is the case in ordinary somnambulism. A person who walks in his sleep does not remember what has occurred when he wakes up. It must have been a dream that caused his somnambulism, but he is unable to remember it. Cases like these are just the cases that are hypnotizable. One can be certain to be able to hypnotize a patient who is frequently walking in his sleep, and under hypnotism one can recall the dream he is living through, so that he then knows why he is walking in his sleep, and the result of the recalling of his dream and the reassociating of that part of his mind with the memories is to abolish the somnambulism. I have found many cases of people who walk in their sleep who can be cured in this particular way, not by hypnotic suggestion but by using the dissociation side. It is quite obviously a state of dissociation, yet it is hypnotism which is most effective in overcoming the earlier dissociation.

And that leads us to a still profounder view of the hypnotic state. Hitherto we have thought of the mind simply as a sort of cinematographic film, a continuous series of memories, and that in dissociation certain limited parts of that memory-continuum are dissociated, cut off, from the rest of the memory. A person suffering from so-called amnesia is hypnotizable, and under hypnotism that lost stretch of memory can be recalled. But when a person is in a hypnotic state he tends to be dissociated even if he was not dissociated before. Dissociation and hypnosis show themselves in the form I have already described. At the end of the hypnotic slumber the patient wakes up, having forgotten what occurred during the hypnosis. If we look at the hypnotic state from the point of view of the normal mind, of the patient in his normal, non-hypnotized state, we see it is dissociation. He looks back on the hypnotic slumber as something of which he remembers nothing. If, on the other hand, one considers the hypnosis from the point of view of a hypnotized patient at the

time he is hypnotized, and also from the point of view of the hypnotist, one sees it is more a state of reintegration, and indeed, more accurately still, it can be regarded as a reaching out towards deeper strata or levels of the mind. To hypnotize a patient is metaphorically almost like driving a shaft through various geological strata to reach underlying strata, and the reason why under hypnotism lost memories are recalled seems to be that the background of the mind that is not ordinarily clear consciousness, the mental activities that are not ordinarily presented to the consciousness of the individual, become conscious as the area of consciousness is widened; and it is because of that, and for that reason, that the lost memory returns. You find the hypnotized person tends to have automatically, quite apart from any suggestion you can give him, a better memory than the unhypnotized person in his normal state. In easily hypnotized patients, such as shell-shocked soldiers, whom I treated during the war, I found it possible to recall almost any specific memories one liked to choose. One could recall birthday memories. These are definite anniversaries, and can be independently tested, and I found that in quite a number of cases I could effect the recalling of memories of every birthday, right back to their first birthday. They would enumerate their birthday presents, what the weather was like on their birthday, and yet in their normal waking state they were quite unable to do this. There was greater accessibility, greater viability between one part of the mind and the other. The patient had greater powers of recall, greater control over his past memory. Besides that, one finds in the hypnotic state that not only does one's wish and decision and resolution and determination to recall memories prove more successful, not only are these processes more successful, but other mental processes produce more pronounced results. Thoughts of alterations in the body, not only as regards memories which are not recallable under ordinary conditions, the production of physical change in different parts of the body, are more easily brought about in the hypnotic state. One can produce rises of temperature—not only a feeling in special parts of the body, but actual physiological rises of temperature, no doubt through alteration in the blood-supply to that part of the body. It is the sympathetic nervous system in direct relationship with the bloodvessels that is stimulated more intensely in the hypnotic state than in the normal state. Of course we know that in the normal state, under special conditions, these parts of the nervous system can be thrown into a state of intense activity, but not at will. In hypnosis the hypnotist is able to bring about these changes in the hypnotized subject at will, and the subject himself can through self-hypnotism produce more effect than in the waking state. In the normal waking state will-power is related mainly to

the voluntary nervous system. The voluntary muscles can be moved at will, as their name implies. The involuntary muscles, the muscles of the intestinal tract and of the bloodvessels, etc., cannot be moved at will. But they can be moved and contract and change under the influence of emotion and other forms of feeling. In the state of hypnosis the hypnotist can call out more pronounced changes in the involuntary muscular system by arousing in the patient the idea of such a change. Arousing the idea of increased blood-supply, or increased heart-rate, in the hypnotized subject seems to be sufficient to produce the result. And a further step is taken when the subject himself, with a little practice, learns to throw himself into the hypnotic state, and in that state becomes able to influence his own bodily functions. There is no doubt whatever about the facts. They are now almost a commonplace, admitted by everyone, although very seldom seen by people. It is only those who devote special attention to hypnotism, and who are able to see large numbers of such cases, who can verify it for themselves.

Examples of Self-Hypnotism

As regards self-hypnotism, there were two demonstrations given to privately invited audiences in London in 1926, a day or two before the General Strike. Two fakirs of Egypt, Rahman Bey and Tara Bey, came over and demonstrated their powers on the platform. I was fortunate enough to be able to see both these cases from the stage itself. They were very similar to one another, they produced the same phenomena, which could be explained for the most part in terms of hypnosis. Tara Bey would hypnotize himself, and had his own especial method of doing it. He put his hands to the sides of his face, put his two thumbs over the carotid artery and special nerves of the neck, took a deep breath, you heard a sound in his throat as though he was swallowing his tongue, and he fell back rigid in the arms of his assistant, and in that rigid condition was anæsthetic, and could retain his rigidity. He was laid upon two scythe-shaped supports, one supporting his feet and the other his neck, and stretched like that could resist the blows of a heavy hammer. Then he was lifted off, and ceased to be rigid in the upright state, but retained his anæsthesia, so that pins and knitting-needles could be thrust through his cheeks. He took a knife and thrust it through the skin of his throat. Another test which he fulfilled was to lie flat on his back on a board full of spikes. There were hundreds of spikes driven into the board close together and fairly sharp, and he lay on these spikes and again allowed the attendant to hammer his abdomen. He then got up, showing the marks in his back where the spikes had pressed on the skin, but

only in a few points had there been penetration of the skin, and practically no bleeding. That test seemed more striking than it really was because the larger the number of spikes the less is the pressure on each single spike. The more terrible-looking the contraption the less severe it was. Then he put himself into a condition where he claimed to abolish the pulse and respiration. Actually that did not occur. Testing him, one noticed that the breathing was going on, and one could feel the pulse at the wrist, at a high rate (though feeble), 150 or 160, the normal rate being 72. In this condition of catalepsy Tara Bey allowed himself to be put into a coffin-shaped box, sand thrown over him, and the box fastened down, with sand heaped over it, and he was ready to remain in that box as long as the audience wished. As he knew the audience were not likely to wait a long time doing nothing, ten minutes was suggested, and he remained ten minutes, while his impresario gave the audience a sketch of his general philosophy of life. At the end of the ten minutes the sand was scraped away, the box was opened and put up vertically in sight of the audience, and just as the ten minutes came to an end he began to breathe more deeply and the colour came back to his face. He looked absolutely cataleptic and livid, but as he began to breathe more deeply his colour returned, and he stepped out of the box in a normal state once again. He claimed that he could do it for a much longer time. He claimed that some fakirs had been buried for days; indeed, there is a story that one in past centuries was buried for twenty years. As far as one can make out there is no evidence of that. The question arises: Does the individual while being buried in that state grow old? and the answer is that he grows old faster than if he lived the ordinary life. One would think that in a state of hibernation one could lengthen one's life, but instead of lengthening life it tends to shorten it. That is what the fakirs themselves say. These phenomena I have described illustrate the effects of self-hypnotism, the influence of mind on body. They show how the power of the mind over the body is increased and intensified in the condition of self-hypnosis. The respiration can be slowed, the pulse rate can be altered, the tendency to bleed can be diminished; but it is well not to be carried away by these phenomena, and not to be too credulous about them.

One should note that the parts of the skin that are tested in this way are parts that have a good blood-supply, but also are not supplied with any large arterial trunk. The cheek has a good supply, that is why it heals up so quickly. Wounds on the face heal up very quickly because the blood-supply is very good, but there are no big arterial trunks there. The same with the shoulder. The fakir took care to choose the parts of the shoulder where there was no big arterial trunk. As for the back, it is well known that

the back is less sensitive than other parts of the body. The question arises whether in the hypnotic state other powers are increased. It has been claimed ever since the hypnotic state was known that the hypnotized person may have powers of clairvoyance and powers of telepathy. In the hypnotic state a person may be able to see events that occur at a distance or may become aware of thoughts in other people's minds. The case of Tara Bey may be taken to illustrate this. Tara Bey brought with him a hypnotic subject—an Armenian—whom he hypnotized and then used as a medium for the reception of telepathic messages. Tara Bey himself acted in the same way, carried out thought-reading experiments, which he himself claimed to be done by means of telepathy. He claimed also that in this state, and even in the waking state, he could foretell the future—give answers to questions referring to the future—and certainly one interesting thing did occur. A gentleman came up on the platform and silently asked a question of Tara Bey's subject, and Tara Bey, standing by, supposed to get the reply through the subject by telepathy, called out to the audience what the subject was saying. He seemed to be saying "Coronet." The gentleman had asked the question what would win the Derby, and had in his mind the possibility of the favourite, Coronach, winning it.[1] If there was no collusion, an incident like that is either a remarkable coincidence or a clear illustration of the fact of telepathy. As far as one can make out, it was not known beforehand that the man would come up on the platform and ask that question. He had a definite standing as a responsible person, and, on the other hand, the impression we got was that Tara Bey himself did not even understand the significance of the answer, and certainly the hypnotized subject did not know English to any extent.

That brings me to the question of telepathy in relation to hypnosis. There are people who believe in telepathy, and yet hold that there is no clear evidence that the hypnotic state increases its frequency. That was not my own experience. I tested a number of hypnotized patients in France, and got definite examples of what seemed to be telepathy, whereas testing normal people under experimental conditions gave one little or no evidence of it. I am inclined to think (speaking now scientifically) that telepathy does occur more frequently in hypnotic cases. One is more likely to get phenomena that seem to illustrate telepathy from hypnotized patients than from unhypnotized patients. It may be due simply to the fact that the hypnotized patient has greater sensory powers than the non-hypnotized individual, and that in that way he can subconsciously guess what is going on, and can put two and two together, or draw inferences. We are not yet fully informed of the conditions under

[1] Coronach did actually win the Derby that year.

which telepathy may take place. One such condition may be a state of hypnosis increasing the frequency of telepathy, but even there we cannot be sure of telepathic results. Secondly, we cannot be sure that it is not in terms of association processes. The clearest example I myself have had of apparent telepathy came from visits to Mrs. Leonard, the well-known medium, and here she does seem to be throwing herself into a state of self-hypnosis before 'Feda' (her 'control') begins to talk and describe what the spirits are saying. Quite a good proportion of the talk does seem to correspond to interests and facts in the sitter's mind, of which he is not consciously aware. Under conditions of sitting to a medium, it is not one's conscious thoughts that influence the medium or are given back to one from the medium. It is what is in one's unconscious mind—what one is not consciously thinking of at the time.[1]

Our central problem is the problem of suggestion, and I have only spoken of hypnosis as a stepping-stone or stage in the story of suggestion. I do not wish to give the impression that hypnotism is a method that is frequently used by psychotherapists; it is only in very special cases that hypnotism is used, and never without the consent of the patient. Indeed, the patient cannot be hypnotized against his will. The trouble is the other way. So many patients come and ask to be hypnotized, and they cannot be hypnotized. With the best will in the world the hypnotic state cannot be produced in them. Indeed, the doctor knows almost at once whether the patient is likely to be a good hypnotic subject or not. Patients who are easily hypnotized are clearly those who are dissociated and are hysterical. And further, the degree of dissociation seems to be related with the degree of hypnotizability. So, arguing from that generalization, one comes to the conclusion that the perfectly normal person would not be hypnotizable, and that anyone is hypnotizable only to the extent to which this hysterical dissociation is present. That does not mean that all weak-minded people are hypnotizable. Far from it. The hysterical is not necessarily weak-minded, nor are mental defectives as a rule hypnotizable. There are exceptions. You can find instances where a feeble-minded person who has a strain of hysteria can be hypnotized, but you would be wrong to generalize from that. Hence the theory that hypnosis is an artificial hysteria is the most plausible theory at the present time—that hypnosis is an artificially produced dissociation of a hysterical nature. As the patient gets free of his dissociation he becomes less and less hypnotizable. If hypnotism is used to overcome a patient's dissociation, you will find on a later occasion that he is not so easily hypnotizable. And—here I agree with Professor Pierre Janet—the test of his cure is the extent to which he has

[1] *Science and Personality*, Oxford University Press, 1929, pp. 196–219.

ceased to become hypnotizable. This test was verified by me in a whole series of cases during the war, cases who were found to be easily hypnotizable; the symptoms were cleared up under hypnosis; one reassociated the patients, and then found them less hypnotizable than before. The sort of cases where repeated hypnotism is justified are cases of drug addiction, alcoholism, and certain perversions of the instincts.

Suggestion without Hypnosis

In most cases the ideal is to get the beneficial effects of suggestion without hypnosis, to get the patient into a state of increased suggestibility without any artificial dissociation of the mind. And that undoubtedly can be done. There is such a thing as a normal state of increased suggestibility. It is a state we all pass through as we fall asleep. In that intermediate state whatever dissociation there is is normal, not pathological, and in that state suggestion may more readily take effect. The stock example is to give the suggestion to oneself that one will wake up at a definite time next morning. If you give that suggestion during the course of the day it may not work; but if you wait till night and make the suggestion to yourself in a calm, confident way, you will find it does tend to work. If you are new to the experiment, you may find your sleep tends to be broken, and you will wake up earlier than the time fixed upon. In medical practice the simplest way to give suggestion is to ask the patient to lie on a couch with muscles relaxed, breathing slowly, deeply, and regularly, thinking of sleep and nothing but sleep, and then to put the necessary suggestions. If the patient has difficulty in concentrating his mind on sleep, I tell him to think about something neutral, something of an unemotional nature. Or again, if he says he cannot think of one definite thing, I ask him to turn passively away from thoughts as they come, just as a person who found a procession passing his window in which he took no interest would turn his eyes away from it. The patient is dwelling on the idea of passivity, not worrying about anything or anybody. He does not listen to what the doctor says, although he hears. And in that state, which Baudouin calls a state of *contention* —concentration without effort—the background of his mind is accessible to what is said and will accept it and carry it out. It is remarkable what effects may be obtained in special cases—not only in cases of illness. One was the case of a musician, who had lost power of concentration and all power to compose. He came for treatment, and under the influence of suggestion (after a preliminary course of analysis) he recovered his power to compose. He fell away again, and came a second time, and it worked in just the same way. After a course of ten hours he was able to compose once more,

and has had no difficulty whatever since. The method is one way of removing unnecessary inhibitions. At the other end of the scale it works in improving memory and power of concentration, and may help a certain type of child who is backward in its lessons.

All forms of suggestion-effects, both pathogenic and therapeutic, have their ultimate explanation in deep-seated reactions of the sub-conscious and unconscious mind, often both complex and distorted. An adequate unravelling of these hidden mental processes may entail a prolonged course of *deep mental analysis*, helped out by methods of "free association," dream interpretation, and other procedures first invented by Sigmund Freud, and constituting part of his technique of psycho-analysis. But permanent therapeutic effects may often be obtained by suggestion independently of deep analysis, although a certain amount of preliminary psychological analysis is always desirable.

PHILOSOPHICAL SURVEY

PHILOSOPHY IN ITALY

A. PINCHERLE has celebrated the centenary of Augustine, Bishop of Hippo, by dedicating to him a book[1] which has been a long time in preparation. It shows an excellent knowledge of the sources and literature, although it is presented bare of erudite embellishments and is directed towards an unspecialized public. It differs from the biographies of Augustine which have been and still are in circulation in Italy, and which, dividing his life into two parts, before and after the conversion, delight to represent him in the first period as a semi-devil and in the second as a sanctified convert. That a superficial and non-critical reading of the *Confessions* might inspire such a conventional picture is plausible; but the *Confessions* do not form Augustine's only book, and by themselves do not explain how it is that, instead of retiring to mortify himself in the desert after his conversion, Augustine continued, or rather intensified his literary activity, which shows no real separation from his earlier work.

All that has since been made over to historical criticism; and from the first page of his book Pincherle opportunely points out that from 1888 onwards Harnack and Boissier have advanced to a critical examination of Augustine's own account of his conversion, comparing it with his dialogues written at Cassiciacum in the period immediately preceding his baptism. They have shown that while the *Confessions* present to us a penitent, a convert who laments over the past, dedicating the greater part of his time to the reading of the Psalms, the later ones show us an Augustine still full of interest in philosophical and literary problems, a reader of Virgil, an enthusiastic admirer of Cicero, a vigilant administrator of the charities of his host.

Thus Augustine's spiritual crisis takes on quite a different character. When we treat of a conspicuously intellectual figure, it is not difficult to persuade ourselves that the forces there in conflict are for the most part forces of thought, and that the actual moral differences manifest themselves in the shock of adverse ethical conceptions. The design of Pincherle's work develops in accordance with this safe guide. He interprets Augustine's youthful Manicheism in the sense that the Manichean doctrine furnished him with an explanation of that duplicity of impulses and tendencies which he felt struggling within him; it explained to him the origin of evil, and helped him to resolve entirely that moral problem which was the only one that truly interested him. Manicheism drew him not so much as religion but as philosophy. Pincherle reduces the importance of the succeeding academic and sceptical phase as being merely transitional, and gives an analogous explanation of it, calling it a last attempt to interpret philosophically his Manicheism, and to save it by motives learnt from Cicero. Having embarked on this excellent route, Pincherle should have given greater prominence to Augustine's philosophical victory over Manicheism, won by the doctrine of the negativity of evil, which conquered the dualism of the Manichean powers. But here it seems to me that Pincherle has allowed

[1] A. PINCHERLE, *Sant' Agostino d'Ippona*, Bari, Laterza, 1930 (8°, pp. 306).

himself to be interrupted by his preoccupation in saving the unity and continuity of Augustine's thought, in view of the last anti-Pelagian phase of his doctrine. In other words, he does not point out sufficiently, or feel the need for giving an adequate explanation of, the separation between the doctrine of the negativity of evil and of the liberty of the will on the one hand, formulated during the period anterior to the Donatistic and Pelagian conflicts, and on the other hand the doctrines of predestination, of the servant will and of grace, which belong to this latter time, and which reflect in some way the posthumous influences of disavowed Manicheism. Now the point which it was necessary to clear is, to my mind, this: if and in what measure the confessional and theological preoccupations, which inspired Augustine to insist on the solidarity of men in the sin of Adam and in their own incapacity to raise themselves by the forces of their own will, superimposed themselves on the exigencies of his philosophic thought, which carried him to recognize the liberty of will and the non-existence of evil as a positive reality.

Another fault in Pincherle's book lies in his having given a value not only predominant (that would have been acceptable), but also an exclusive value to the moral problems treated of by Augustine. What about the logic, and the cosmology, and the psychology—in that part at least which concerns the different aspects of morality? You may look in vain for one single indication of them in the whole volume. Yet the doctrine of divine illumination, of the seminal reasons and the trinitarian interpretations of the human spirit merited a profound examination, especially in view of the enormous importance which they had throughout medieval philosophy. With nothing more than the problems of will, of grace, and of predestination, it is possible to explain, for example, the Augustine of the Reformation, but certainly not the scholastic Augustinianism whose orientation is speculative rather than ethical. These observations, however, are not meant to diminish the importance of Pincherle's book, which is by far the best that there is to-day in Italy on Augustine, and which, in not a few points, especially in the analysis of the City of God, gains the full approbation of the reader.

In a notably interesting book A. Banfi[1] relates the life of Galileo Galilei, interweaving with it the genetic exposition of the scientific and philosophical Galilean doctrines. Banfi, who did not specialize in research in the natural sciences, but was a student of philosophy, has given predominance to the methodological aspect of the thought of Galileo, which is without doubt the most important, because what distinguishes the science of the Tuscan mathematician from the science of his contemporaries is not so much the sum of the new results achieved (which alone is great enough) as the fertility of the new mental procedure from which the whole of modern science is derived. However, it would have been more desirable had the author given us a broader exemplification of that fertility, in order to show that, in Galileo, the method is born together with a new content of thought, and is not, as it is for example in Bacon, a rather abstract hypostasis, which explains his incomparably greater efficacy.

The best parts of the book are those in which the author describes the changes in Galileo's life. Up to the period of the Paduan teaching Banfi was guided by the old volume of Favaro; but later on, where the research assumes a more personal character, the interest of the reader does not languish. The author has notable powers for evocatory and reconstructive work; he never assumes the unsupportable tone of the panegyrist. Indeed, he lays no little

1 A. Banfi, *Vita di Galileo Galilei*, Milano-Roma, 1930, Soc. Editrice "La Cultura" (8o°, pp. 273).

censure on the moral and civic qualities of his hero. Outside the world of science, in which he moves with sovereign gesture, Galileo the man is mediocre: niggardly and self-interested in economic relations, dry and cynical in family life, weak in adversity. His attitude during the trial does not reveal any note of high humanity or disdainful pride: he cedes on all points to the Inquisitorial injunctions, and follows his prudential submission up to the point of condemning, even in private letters, that Copernicanism which had made his glory. He did so to such an extent that in his relations with the Inquisition he had the irrefutable alibi that his *Dialogo dei Massimi Sistemi* had been published in consequence of regular ecclesiastical approbation. But Inquisitorial perfidy, as Banfi illustrates so clearly, revealed itself in the cunning power (to which, it must needs be added, Galileo's acquiescence alone could assure success) to surmount this obstacle, charging him not so much with having published the book as with having violated a previous undertaking, contracted in writing before Cardinal Bellarmine. Now this undertaking (not to support Copernicanism after the condemnation of 1616), at least in the absolute form with which he had been charged, was only a falsification of the Curia, contradicted by the same declaration of Bellarmine. Yet, after having tried to excuse himself for it, he attributed to himself in his abjuration this crime as well, which gave the legal pretext for his condemnation.

To penetrate the secret of Hegel is a problem which has always tempted the historians of philosophy. Formerly the best way to attack it seemed to be to delve in the formulas of the Logic or of the Phenomenology, to seek there the key to the mystery. To-day it is preferable to follow another route: to study the genesis of these formulas by investigating the spiritual formation of Hegel, examining in particular the philosopher's youthful productions. After the great work of Dilthey, lately republished in the complete edition of the works of the German historian, many kindred writings have seen the light, which in part confirm and in part modify Dilthey's theses, as a basis for new documents which have appeared during these last years; particularly Hegel's youthful writings on theology, printed by Nohl in 1907, which had previously for the most part been preserved as manuscripts in the National Library of Berlin. A recent book by Della Volpe[1] follows the first steps of Hegel's literary activity from 1793 to 1800, and seeks to trace in them the first orientations of the future system. Della Volpe's principal thesis is that Hegel began as an illuminist, to be converted soon after to a mystical romantic trend, especially under the influence of Schiller's *Æsthetic Letters*, the philosophical poetry of his friend and co-disciple Hölderlin, and the reading of the works of Meister Eckhart. Illuministic and Kantian motives are to be found in one of the very first writings of Hegel, in a Life of Jesus, which centres in "the dramatic struggle between the rational religion of Jesus, religion of the spiritual life within, understood in the Kantian sense as law and duty, and the church religion, external, ceremonial, of the Pharisees" (p. 42). Between this little work, composed at the age of twenty-four, and the *Spirit of Christianity*, produced in 1798–99, few years elapse, but they are decisive years for the spiritual formation of the philosopher. To the Kantian orientation succeeds a powerful hostility against the ethics of Kant, dividing the spirit into two parts, which cannot be absorbed the one with the other, "while the morality of Christ is the true morality, the elevation of the particular to the universal, the annulment of both the opposites through their harmonious union, very different

[1] G. Della Volpe, *Hegel romantico e mistico*, Firenze, Le Monnier, 1929 (8°, pp. 224).

from the abstract intellectual unity of Kant" (p. 136). In this sketch of Christian metaphysics of love, which is naturally founded on the Fourth Gospel and on the mystic tradition which completes it, we find the first indications not only of a dialectic mediation of the opposites through an activity more elevated than that of the intellect, but also of a phenomenological exposition of the life of the spirit. We should note also—and the author gives it a timely importance—the depth of the youthful Hegel's historical intuition, which detaches itself from the background of the illuministic mentality of 1700 in search of positive and constructive explanations of what Illuminism too easily confined among prejudices and superstitions: "When it has also been explained with the usual method of intellectual analysis"—says Hegel—"that the internal structure of dogmatics is a remnant of centuries of twilight, inacceptable in the times of the illuminati, it is nevertheless human to ask oneself how it can be explained that such a structure contrary to human reason has been able to grow up and be completed." These words, observes Della Volpe with Dilthey, express the state of mind common to different pioneers of the art of history. Della Volpe separates himself from the preceding literature on Hegel's youthful writings, which he usually follows, in so far as it tends to undervalue the influences of Fichte and Schelling, in comparison with Hölderlin and Eckhart, on the formation of Hegel's mind.

Della Volpe has also published an elaborate monograph on the mysticism of Meister Eckhart.[1] In a long introduction he sets out a historical excursus on the principal philosophical formulations of the mysticism of the Ancients and of the Middle Ages, proceeding from the neo-Platonic school, through Augustine and pseudo-Dionysius the Areopagite, as far as the school of St. Victor and the Franciscan mysticism of the thirteenth century. This introduction aims partly at linking up Eckhart with his predecessors, partly at distinguishing him from them, showing that the traditional negative theology seeks to save divine transcendence through the concept that between God and man there is nothing in common, while the theology of Eckhart, "far from accentuating the transcendence, confirms openly the divine immanence," and expresses the "absorption, the identification of God in His creature" (pp. 195–6). This conclusion is perhaps too restricted; generally it is vain to ask mystics for rigorous solutions of philosophical problems, because they often follow a disconcerting line in their effusions. Anyhow, this thesis of Della Volpe, with convenient limitations, represents a useful reaction to certain recent interpretations of Eckhart which tend to make him an exponent of medieval thought closer to orthodoxy. The documentation of the book is founded on the treatises and sermons in German and on the Latin writings published by Denifle. Della Volpe shows their complete consistency with one another; if the first have a more mystic intonation, and the others a more theological one, this difference is explained, not by a substantial diversity of inspiration, but simply by the exigencies of the occasions on which they were delivered, the first being directed towards a common public of the faithful, the others to a restricted circle of the learned. Della Volpe's book abounds in long extracts of Eckhart's writings in Latin and German, which prove very useful to the reader who has not the opportunity to consult the works in full.

GUIDO DE RUGGIERO.

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[1] G. DELLA VOLPE, *Il misticismo speculativo di Maestro Eckart nei suoi rapporti storici* Bologna, Cappelli, 1930 (8°, pp. 286).

(*Translated from the Italian by* CONSTANCE M. ALLEN.)

PHILOSOPHICAL SURVEY

PHILOSOPHY IN RUSSIA

MARXIST philosophers in Soviet Russia make a great deal of the distinction between 'dialectical' and 'mechanistic' materialism, but in spite of all that has been written about it by Lenin and others, the difference between these two theories is none too obvious to an outsider, and one is glad to have fresh light on the subject. B. Byhovsky's book, recently published in Moscow, *The Philosophy of Dialectic Materialism* (*Ocherk philosophii dialecticheskago materialisma*), is quite a good exposition of the doctrine in question, but it also leaves one wondering if there is much to choose between his version and the more old-fashioned presentations of the materialistic view. Following Holbach, Lenin, and Plehanov, Byhovsky defines matter from the epistomological point of view as that which affects our sense-organs and produces sensations in us. From the point of view of physics no definition of matter *per genus et differentiam* can be given because 'matter is all that exists,' and cannot be subsumed under any more general notion. All there is in the universe is matter and its manifestations. Consciousness, too, is a manifestation of matter: it is the function of entities organized in a certain way. Byhovsky does not say, however, that consciousness is *caused* by material processes; he definitely asserts that "material changes produce nothing but material changes," and that "existence and consciousness are not two distinct essences, but are a unity of matter and its qualities." "Subjectivity is an aspect or feature of the objective reality." At the same time Byhovsky emphatically maintains that consciousness is not an original but a derivative characteristic of matter, and is the product of a high degree of evolution. The contradiction between these two sets of assertions does not seem to trouble him. There is, he says, all the difference in the world between the dialectical materialism he is expounding and the mechanistic materialism of Hobbes, Holbach, and others. For the mechanistic materialism movement means merely a change of place, sensible qualities are merely subjective, the complex is reducible to the simple: matter is a combination of homogeneous elements, the highly complex forms of movement such as social or physiological changes are explained by mechanical laws, and so on. For the dialectical materialism, however, movement means every kind of change—qualitative as well as change in spatial position; qualities are 'objective specifications'; matter contains qualitative distinctions; and although the higher forms of life are produced by the lower, the new syntheses that spring up in the course of evolution give rise to new physical laws that cannot be reduced to a mere combination of those that hold at the more elementary levels. Everything is subject to the laws of mechanics, but not to its laws alone. Dialectic materialism interprets movement as the development of an A into a non-A, qualitatively distinct from and even opposed to it; the original A, however, is not destroyed but enters into the non-A as its constituent element. Thus, *e.g.*, "the destruction of capitalism implies the assimilation of its technical and cultural achievements." Every existing thing is a unity of opposites, and every change is 'an embodied contradiction,' a conflict of warring forces giving rise to a new quality that contains fresh contradictions in its turn.

It is probably these vague echoes of the Hegelian philosophy that lead some of the younger thinkers from dialectical materialism to the study of Hegel, and, as was mentioned in the last Survey, to conclusions that rightly seem alarming to orthodox Marxists. But there must be great confusion of thought among the red philosophers, for they keep accusing one another of 'idealism,' when, quite obviously, no trace of that heresy can be detected in their writings. The recent victim of this accusation is, of all people, the red acade-

mician, Deborin, who has furiously attacked idealism all his life, has modelled his own philosophy entirely on that of Lenin, and is one of the dullest and most complacent adherents of dialectical materialism that ever was! Deborin's official position is so secure that one can afford to laugh at his discomfiture in being classed with his sworn enemies; but it is no joke to be recognized as an idealist if one is not a *persona grata* with the Soviet Government. Bad news has been received of the one real philosopher that Soviet Russia can boast of—Losev, author of the *Philosophy of Name, Ancient Cosmos and Modern Science*, etc. He had the courage openly to defend a system of thought that is essentially spiritualistic, and the result is that his books—obstruse and profound metaphysical treatises—have been pronounced 'counter-revolutionary,' and he has been exiled to northern Siberia.

Several works of philosophical interest have been published by the Russian *emigrés*. One that particularly deserves mention is *The Structure of Life*, a little book by K. Starynkevitch, a Russian botanist who died in 1926 in Paris. It has just been printed in Prague, with a preface by Professor Lossky. Starynkevitch maintains that all organic life presupposes a special kind of interconnectedness between the component parts of an organism, in virtue of which each part *knows*, as it were, what the whole *wants*. He is careful to say that the expressions 'knows' and 'wants' are of course mere metaphors, for the faculties of knowing and willing arise at a late stage in the process of evolution, but they can only develop on the basis of a pre-conscious or 'primordial' intuition. It is this pre-conscious intuition that makes possible the purposive co-ordination between living cells, manifesting itself in the processes of growth, reproduction, readjustment to environment, etc., that are characteristic of all living organisms. This co-ordination exists not only in individual organisms such as a particular plant or the human body, but also in the case of groups or colonies of organisms such as a forest, a marsh, etc. A forest is more than the sum of individual trees that compose it: it is a living whole, reacting in a certain way to its environment, holding its own against the encroachments of the marsh-land or the steppes, and so on. Carrying this line of thought farther, Starynkevitch comes to the conclusion that all biological processes on our planet are interdependent, and form part of one living whole, which may as such be capable of reproduction. Following S. Arrenius's theory of panspermy according to which micro-organisms can be carried by the rays of light from one heavenly body to another, Starynkevitch works out the conception of 'planetary heredity.' The varied examples he gives of interdependence between the different forms of life make his little book fascinating reading. It is for specialists to say whether the facts admit of any other explanation than that offered by him; the philosophical interest of the book lies in his applying the conception of pre-conscious intuition, which some thinkers consider to be the necessary presupposition of cognition, to the processes of organic life as a whole.

The idea of organic unity so deeply characteristic of Russian thought is to be found in another form in Professor N. Alexeyev's *Theory of the State*. He understands by the State a social individual entity, the constituent elements of which are territory, population, a government, and an orderly way of life. Such an entity is an organic whole, a multi-human personality. It differs from a single human personality by not having a single centre of reference, but existing merely in and through particular individual minds. In so far as the State is composed of human personalities endowed with spiritual life, it is not only an organic process, but also something supra-organic. Political organization presupposes the existence of a leading social class, the authority of which is based upon its being regarded as in some sense superior to other

classes. Modern democracy is an attempt to build up a State without a leading class, and is therefore bound to end in failure; only those States will survive that can succeed in training a leading class bound together by common beliefs and aspirations. A State with such a leading class would be an 'idiocracy,' and the best State will be one whose leading class is inspired by the true conception of the meaning of the world as a whole. The author's fear and distrust of democracy is typical of the Russian *emigrés* psychology, and so is his hopelessly theoretical way of handling the problems of political life.

A very interesting little book by B. Vysheslavtsev has been published by the Y.M.C.A. Press in Paris, *The Heart in Christian and Indian Mysticism*. By the 'heart' Vysheslavtsev means not only our emotional nature, but the ontological super-rational principle in which our true selfhood consists. That principle is the source both of good and of evil, for the essence of selfhood is freedom. It is both spiritual and physical, for it transcends the distinction between soul and body. In the course of the discussion Vysheslavtsev raises many important problems, and whether one agrees with his solution of them or no, one cannot help enjoying the clear and original way in which he presents the subject.

Father Sergey Bulgakov's book on *Ikons and Ikon-Worship*, just out of the press, is primarily theological, but has considerable philosophical interest. Starting with a consideration of the historical arguments for and against ikon-worship, Bulgakov passes to the general question in what sense, if any, can there be pictorial representation of God. His answer is bound up with his general theory of the relation between God and the world, and, roughly stated, consists in saying that all creation, and man especially, is in its eternal essence a living ikon of the Deity. The world is made in God's image, and a reflection of some aspect of Godhead may be caught in a work of art. In painting an ikon of Christ the artist represents not only Christ's physical body, but also His divinity, in so far as the body is a symbol or image of the spirit.

An excellent book on modern German thought has been written in French by a Russian philosopher, G. Gurvitch: *Les tendences actuelles de la Philosophie allemande. G. Husserl, M. Scheler, E. Lask, N. Hartmann. M. Heidegger.* (Paris, Librairie philosophique Vrin. 1930.) Gurvitch's knowledge of German philosophy is very thorough, and his book on Fichte's ethics (written in German) is said to be a fine piece of work.

Another young Russian philosopher who writes in French, Alexandre Koyré, has brought out a book that is of great value to those who are interested in the history of Russian thought: *La philosophie et le problème national en Russie au début du XIX^e siècle* (Paris, Librairie ancienne Honoré Champion).

The first number of *Der Russische Gedanke* for 1931 contains articles by Lapshin, A. Weidemann, Yakovenko, Zenkovsky, Karsavin, and others, three reports of the Oxford Congress of Philosophy, some portraits, and many reviews. It is a very interesting number; most of the articles are concerned with philosophical subjects, but some deal with Russian literature and history; three are not by Russian authors, but by foreigners interested in Russian thought. It is worth while to say a few words about Professor Lapshin's and Zenkovsky's articles. Lapshin in his *Von der Ueberwindung des Solipsismus* argues that Kantian transcendentalism, of which he is an exponent, need not lead to solipsism, for unperceived events and other selves may be regarded as objects of *possible* experience; the assertion that all objects as cognized by me are my ideas should be interpreted in the light of the distinction between the psycho-physical and the epistemological self. Zenkovsky in his article *Die Philosophie der religiösen Erfahrung* sketches out his conception of religious experience. By 'experience' he means a content of consciousness that has a

given character, is conditioned by the interaction between subject and object, and has objective reference. Criticizing the attempts made by Durkheim, Freud, and others to explain religious experience as derivative, he points out that the experiences from which it is supposed to be derived (*e.g.* social relations) already contain the religious element. One is driven to the conclusion that there are to be found in our consciousness religious data which are *sui generis*, and can only be explained by the interaction between the knowing subject and a trans-subjective principle. That principle reveals itself in mystical experience as an all-embracing whole, and consequently many religious people are inclined to interpret it in the spirit of pantheism. This, however, is not the only deliverance of religious consciousness: in many cases it is supplemented by an experience of communion with the supreme principle recognized as a personal or a super-personal being, revealing Itself to us through the Word. The fact that there are many revelations, and that to some extent they contradict one another, does not prove that revelation as such is merely subjective, any more than hallucinations and illusions prove all perception to be false. Zenkovsky solves the contradiction between the pantheistic and the theistic deliverances of consciousness by pointing out that in the pantheistic experience the vision of the divine aspect of the created world is mistaken for the vision of the Deity Itself.

Zenkovsky has something more to say with regard to pantheism in a long article in *Put*, in which he expounds his conception of the relation between God and the world and defends the idea of creation versus 'emanation.' Another interesting article in the same journal is G. Florovsky's spirited attack on German idealism, in which he detects pantheistic tendencies. It is not altogether clear what these authors mean by 'pantheism,' but it evidently is like a red rag to a bull to them! They both write brilliantly, but their arguments would be more convincing if they did not take it for granted that 'pantheistic tendencies' are essentially reprehensible. There is a very good article by Vysheslavtsev, in which he applies the psycho-analytical conception of sublimation to the problems of moral life, and an excellent one by S. Frank on *Psycho-analysis as a Philosophy*.

A new book by Professor Lossky, *Values and Existence*, has just been published in Paris, too late for giving an account of it in the present Survey.

NATALIE DUDDINGTON.

NEW BOOKS

The Faith of a Moralist: Gifford Lectures delivered in the University of St. Andrews, 1926–1928. By A. E. Taylor. Series I, "The Theological Implications of Morality," pp. xx + 437. Series II. "Natural Theology and the Positive Religions," pp. xxii + 437. (London: Macmillan and Co. 1930. In Two Volumes, 15s. each.)

Professor Taylor's Gifford Lectures present the moral argument to Theism in a new and original form. The purport of the First Series is to show how the moral life of man furnishes an approach not merely to the God of Natural Theology, but to the God of Revelation. It bears witness "to three great strictly *supernatural* or *other-world* realities—God, grace, eternal life." In the Second Series this admission of the supernatural is developed further to the conclusion that the "revelational, historical, authoritarian, and institutional elements" present in all the higher religious faiths are no "irrelevant trappings, but themselves an integral and indispensable factor in a living religion" (II. 11–12)—and, we may add, in a living morality. Professor Taylor asks the following questions: (*a*) Is the moral end, the good for man, to be found in the satisfaction of merely temporal interests, or does it imply an other-worldly goal of aspiration, that is at once eternal and real? If so, what is this super-temporal good, and what is its bearing on our actual life and its obligations? (*b*) Can the good be attained by man's unaided effort, or is "an antecedent outgoing movement" on the part of the *res infinita et æterna*, in other words, the grace of God, a presupposition of the moral life? The answer to these questions shows that Ethics, while possessed of a relative autonomy, points beyond itself to a theology, which, since it embraces the belief in God's initiative of self-disclosure, passes the limits of Pure Reason.

This is a high argument, worthy of a distinguished philosopher, and not to be essayed by any but one who knows religion from within. Professor Taylor brings to his task the courage born of a great sincerity. He is well aware that his conclusions do not admit of logical demonstration. The appeal is to reason, not in its restricted sense of logical ratiocination, but as inclusive of a reasonable faith. His contention is just that reason demands from the philosopher the recognition of contingency, *i.e.* of what defies 'rationalization,' in the dealings of God with man. He is studiously careful to preserve an impartial balance between the claims of Christianity and other faiths. Yet his interest in his theme is not merely theoretical. He writes as a fervent believer in the Christian revelation, who is deeply sensible of the danger to morality as well as to religion from the growing laicization of our public education. Secularism is the enemy. Hence, in the more controversial sections of the lectures, he concentrates on the refutation of Naturalism rather than of other types of non-religious ethical theory. His eye is fixed from first to last upon his Gifford audience, members of the cultured public who are not professed philosophers. This is all to the good; for philosophy is still too prone to linger on its academic pinnacle. At the same time, it explains certain imperfections in the author's presentation of his subject, *e.g.* diffuseness in exposition and a tendency to repetition of earlier statements, which, while legitimate in a lecture, impair the impressiveness of a book when read. We cannot but regret that, as he tells us in the Preface, he refrained from recasting

the lectures "in a severer literary form." But this is of secondary moment, compared with the originality and daring of Professor Taylor's design and the fine quality of his achievement.

The basis on which Professor Taylor's argument rests is twofold, (*a*) his theory of Fact and Value, (*b*) his theory of Time.

(*a*) Religion stands or falls with the belief in the existence of its object. This is why the religious life, as is explained in the Second Series, can never be merely an affair of spiritual values, severed from historical attachments. God cannot be manufactured out of universals. Morality, on the other hand, remains, as bare morality, within the limits of the 'ought,' which is irreducible to terms of 'is.' "A moral conviction is a belief not in the actuality or reality of anything, but a belief in the *goodness* of certain things, or . . . in the *rightness* of certain kinds of conduct" (I. 28). If this severance is ultimate, as is held *e.g.* by McTaggart and Mr. Russell, the moral life can never span the gulf that parts it from religion.

In his second chapter Professor Taylor gives three arguments to show that this is not the case. (i) The severance rests upon a false abstraction. Universals are valueless *in abstracto*; virtue and knowledge, for example, have value only as the concrete experiences of actual persons. What is loosely spoken of as truth-value is really the value of the knowledge of an individual knower. Value thus belongs only to the actual; we are told later (II. 147) that God is "the supreme value at the basis of fact." (ii) The non-existent cannot be the object of a significant judgment. All propositions have existential import; the universal, as "a formal implication, not between propositions, but between propositional functions," is "something less than an actual proposition" (I. 48). But individual existence is not restricted to what has location and date in Space-Time. There follows an illuminating discussion of Aristotle's doctrine of analogous predication as applicable to the concept of existence, in which Professor Taylor implicitly refutes, what he nowhere treats explicitly, the theory, held by Dr. Moore and others, of the "subsistence" as distinct from the "existence" of universals. (iii) No hard and fast line can be drawn between given fact and our interpretations of it in terms of value. We never meet with a bare datum devoid of meaning, or with interpretation barely superimposed by the mind on fact. The actual world is such that values, like other real qualities, are found within it. In Professor Whitehead's language, a *res vera* destitute of ingredient objects is as mythical an abstraction as a merely possible object that has no ingredience in a *res vera*. This last point is developed in fuller detail in the later pages of chapter viii, where Professor Taylor, in reference to the *dictum* that "the other world is this world rightly understood," insists that all understanding is appreciation, and that value is discoverable, not in man's moral experience only, but throughout Nature. The world presents in its structure a hierarchy of patterns, kinematical, biological, psychological, moral; a hierarchy wherein the more abstract subordinate patterns reproduce, "in varying degrees of fullness and distinctness, the characteristic pattern of the whole" (I. 360), and admit of understanding and appreciation just in so far as they are seen to be instrumental to the richer and all-pervasive pattern. The whole pattern must indeed remain unfathomable to our intellect, "but the richer partial patterns at least indicate to us what are relatively the dominant features." These "dominant features in the pattern of reality" are what we mean by values (I. 374).

The facts are what they are through men's moral valuations, and those valuations reveal the nature of the facts. But there are bad actualities as well as good. Professor Taylor is not the man to ignore the problem of evil

in the world and man. He wonders rather (I. 163–4) that so many moralists, always excepting Plato and Kant—and, we may add, Butler—have shirked this issue, confining their attention to the nature of goodness and the good. Nor does ideal value admit of complete realization within the sphere of temporal existence. Yet, if it be not realizable, man's moral life is an illusion, and his struggle against evil passion a vain endeavour. The discussion of value here brings us to the theory of Time.

(*b*) Morality and religion alike imply that Time is real. Professor Taylor ably vindicates its reality against McTaggart (see the admirable criticism in the note appended to chapter iii) and ancient and modern theosophical theories. Morality and religion alike imply transcendence of the temporal order. Here Professor Taylor comes to grips with Naturalism. Time is indeed the stuff out of which the moral life is shaped; but if that life has any meaning, it means a tension between the temporal and the eternal. To be aware of the temporal is already to transcend it. Man not merely, like lower organisms, has a history, responding to the environment in a manner dependent on the route by which he has reached his present state; his past is a *living* past, which he can shape by rational purpose, thus presaging an ideal experience in which past and future are gathered within the compass of the present. What sort of Time, what sort of Eternity, does morality thus imply? The Time that is real is not the abstract Time of mathematical physics, with mere succession of earlier and later, and no past, present, or future; but the lived Time of human conative experience, Bergson's *durée reelle*, with its 'no more' and 'not yet', and with succession within the 'now'. (Professor Taylor returns to this theme in the eighth chapter of the Second Series, where he subjects Bergson's theory of intellect to very trenchant criticism). The eternity, which is requisite for man's attainment of the moral goal, is not the absolute eternity of God, without duration or succession, but a continuous present, which, though without consciousness of past and future as such, admits of succession within its unending stretch, and of progress not *towards*, but *in* fruition. The successiveness would lie, not in the knower or in the knowing, but solely in the known (I. 429). This highly interesting, if difficult, view of a Heaven that allows of a real "communion of saints" in reciprocal relations of service and of a *visio Dei* that forms a sequence of wonderful surprises, is supported by analogies from the richest human experiences (*e.g.* the full enjoyment of music or intellectual converse), and by reference both to the Aristotelian distinction of γένεσις and ἐνέργεια, and to the Thomist concept of *ævum*, *i.e.* of a "participated eternity", which is "all at once", and yet permits of the consciousness of "before and after" within the "now". Professor Taylor claims that it "conforms exactly" to Boëthius's classic definition of eternity.

Since the basis of the moral life is in the temporal and its crown in the supernatural, the Good for man must be sought beyond the limits of the historical order. Professor Taylor is alive to the difficulty of determining its nature. "The 'Form of Good' may be 'the master-light of all our seeing', but if we are asked *what* it is, though the better men we are, the less hopelessly vague our answer may be expected to be, the best of us has nothing like a 'clear and distinct idea' of what he would be at" (I. 70). But interpretation, on Cartesian lines, in terms of 'clear and distinct ideas,' equally breaks down whenever we pass beyond those aspects of nature that are explicable by purely kinematical formulæ. It is a grave error "to contrast the life of ethics as lived in the clear daylight with the life of religion as one of twilight, mystery, and danger. All these are to be found in the ethical life itself" (I. 161). All Utopias modelled after the fashion of man's temporal environment seem on examination "at

least as likely to prove a 'hell on earth' as a 'heaven below.'" Moral insight does not decipher the future in the light of the present and the past, but rather the past and present in the light of a future, which, when it arrives, reveals the significance of the antecedent happenings for an unforeseeable and startling issue. This is what Hegel called 'the cunning of Reason'; and it is applied significantly, in the Second Series of these lectures, to justify the sudden and intrusive character of religious revelation (II. 85 ff.).

Professor Taylor identifies—in our opinion somewhat rapidly—the Moral Ideal with God. He has no patience with mere abstractions. The supreme Value must be One and Individual. As against the doctrine of a plurality of intrinsic goods, he appeals to the principles of analogical unity and of hierarchical order, and to the evidence, within human experience, that moral advance means progressive unification alike of personality and of the goods that are the objects of its desire (I. 101 ff.). As against Kant, he argues that the Moral Law is impotent to excite worship; "we cannot worship what is no richer in quality than our own self; we can only worship what is all, and more than all, we mean when we speak of ourselves as living, intelligent, moral, and personal" (I. 159). Further, the attainment of the Good, the task of becoming like to God, is impossible apart from grace. Professor Taylor is troubled by the failure of ethical thinkers, especially Spinoza and Kant, to handle the problem of the adequate motivation of the Will for Good. If man is to reshape his personality and rise from the plane of the temporal to the eternal, it can only be through an act of initiative from the divine going forth to meet his responsive effort. God must be the efficient as well as the final cause of moral redemption. Such is the purport of the chapter (vi) entitled "The Initiative of the Eternal," perhaps the finest in the first volume, in which the author effects the passage from morality to a theology that is not merely natural but revealed. In the following chapter he treats of the super-temporal destiny thus marked out for man by his moral nature. Following the Platonic and Christian tradition, for which the belief in immortality is bound up with the belief in God, he rejects alike McTaggart's non-theistic and non-ethical arguments, the historic metaphysical argument from the simplicity of the soul (which proves only that, if the soul perishes, it perishes all at once), and the empirical argument from psychical phenomena. None of these has the ethical basis requisite for adequate demonstration. Professor Taylor holds that demonstration is possible, if it be granted that moral obligation is unconditional and that its claim is unrealizable within this-worldly experience. Reality of function implies a real environment for its exercise. Moral vision, like physical vision, implies a real object (I. 231); and the object is nowhere discoverable in a world of becoming which, as such, possesses no abiding actuality. "Unless we admit that moral imperatives cannot and need not be justified at all, and to have no genuine obligatoriness about them, we must be prepared to admit that there is good rational ground for anticipating a destination of human persons which is ignored when such persons are thought of as merely transient; morality will thus bear a real witness of its own to the presence of the seeds of immortality in us" (I. 293).

Professor Taylor will hardly expect the line of reasoning by which he develops the implications of morality to these fine issues to be accepted without cavil by the majority of philosophic critics. The present reviewer, finding himself in substantial agreement with the argument, is inclined rather to question whether the delimitation of the spheres of morality and religion has been drawn with sufficiently firm a hand. We readily agree that morality is not a self-contained form of experience, but points beyond itself to a goal incommensurable with any temporal actualization; that man's desire for

good, when thought out, is found to be a desire for a *res infinita et æterna*; and that when religion is brought to bear on human conduct, it raises moral *praxis* to a higher and richer plane. Moreover, it effects this transfiguration, as Professor Taylor well shows (II. 63–65, 269 ff.), not so much by express ethical teaching as indirectly, by its revelation of the nature of God. In the Second Series Professor Taylor makes abundantly clear that religion is "something quite different from a moral rule of life" (II. 67), that "morality at its best, and the practice of the presence of God are two, not one" (II. 68), and that to treat religion as an "instrumental adjunct" to morality means death alike to genuine worship and to earnest moral endeavour (II. 137). But, in the First Series, we find him constantly characterizing the moral life in terms which are proper only to religion; as when the notion of sin is described as ethical rather than theological (I. 163, 169), or repentance is spoken of as a constant feature of moral experience (I. 85, 175), or the moral life is regarded as a "dying life" (I. 132), or "Thou must be born again" is said to be "the central proposition of all genuine morality" (I. 233). There is a certain ambiguity between such a "genuine morality," which is in fact morality enriched by religion, and the "mere morality," of which Professor Taylor is apt to speak with, it seems to us, undue disparagement. We regret that he should not have set out on his enterprise by defining clearly and in detail the nature of morality as such, the morality that we find expounded, *e.g.*, by Aristotle and Dr. Moore, and have subsequently developed from this basis its implications of self-transcendence. There would then have been no danger of blurring the distinction between mere morality and morality informed by the spirit and temper of religion. As it is, Professor Taylor tends to interpret the moral life proleptically, as the *virtus infusa*, so clearly distinguished by St. Thomas from the morality attainable by the natural light of reason, *i.e.* as virtue raised to a higher power through the possession of revealed truth and the inspiration of supernatural grace. The morality realizable in the lives of good men who are "deity-blind" is something quite different in its character and value from the morality of Naturalism on the one hand, and, on the other, the transfigured *praxis* of the saint.

There is a further point which we should like to question in Professor Taylor's account of the moral life. He follows the historical tradition in interpreting it as a life lived *sub ratione boni* and motived solely by desire of good, in opposition to the Kantian doctrine which interprets it in the light of the concept of duty, holding that an action to be moral must be done for the sake of its own rightness and for no ulterior end. But we refrain from labouring here our grounds for disagreement, since they have been fully expressed in articles recently published in this *Journal*.

The Second Series of Lectures, entitled "Natural Theology and the Positive Religions," deal with the question how far a philosopher is *reasonably* justified in accepting, in principle, the contingent or historical, as distinct from the purely rational, features regarded as essential by all the great positive religions. These features are (1) their claim to rest on an immediately given revelation (ch. ii.); (2) the inclusion among their *credenda* of assertions as to historical fact (ch. iii.); (3) the miraculous character of certain of these alleged facts (ch. iv.); (4) their appeal to an authority, which, as divine, is held to be infallible and final (ch. v.); and (5) their prescription of a corporate rule of life and worship, their institutions, and their sacraments (chs. vi, vii). Professor Taylor endeavours to handle these features as common to the higher world-religions and to avoid as far as possible discussion of doctrines and practices peculiar to his own form of Christianity. His aim throughout is to show the speculative insufficiency of any purely Natural Theology, and so to

vindicate the intrinsic reasonableness of a faith in a supernatural revelation. He is fully aware that he is skating upon thin ice. He obviously must turn for concrete illustration to the religion with which he has direct personal acquaintance; and he has a pleasant way of ruling out a particular topic as "of course" beyond the strict programme of his lecture, and then expatiating upon it, to the delight and instruction of the reader. But no one can charge him with transgressing the limits prescribed to a Gifford Lecturer. The arms of the founder are, in fact, wider than those of St. Peter; and Professor Taylor need have no fear that when he meets Lord Gifford in their true *patria* he will be visited with reproaches for his bold ventures.

In discussing this Second Series we must limit ourselves to three general observations. (1) The argument throughout rests on analogy between those aspects of secular experience which defy rationalization and those in which the positive religions discern the marks of supernatural agency. So genius in art and science presents a like intrusiveness to prophetic revelation, disclosing suddenly, at rare intervals and to a few chosen spirits, a vision of reality which demands an act of faith for its acceptance. So in the evolutionary process new qualities emerge, to be accepted as inexplicable fact, displaying in their emergence an abruptness and discontinuity analogous to the miraculous in religion. Scientific knowledge of the physical is the product of intelligence controlled by the authority of sense-perception, an authority incapable of rational justification, and whose claim to "infallibility" does not preclude all possibility of error. Family and communal life generate their appropriate forms of ceremonial observance which serve to focus and foster the personal loyalty of their members. Once more, Professor Taylor shows, in what is perhaps the most impressive chapter in the Series, how the principle exemplified everywhere in the intellectual and moral life of man, that the physical ministers to the spiritual as its outward and visible embodiment; would lead us to expect that "if there is a further level of the life of the spirit concerned with conscious relation to the divine," the highest gifts of God should, "as a general rule, come to us in connection with, and dependence on, physical things and bodily acts as their channels or instruments. In a world where nature is full of sacraments, it would be strange if grace had not its sacraments too" (II. 303). (2) In chapter viii ("The Ultimate Tension"), Professor Taylor returns to the problem of Time and the Eternal. The acceptance of the historical element in religion "requires us to ascribe a significance to Time and temporal events and processes which is denied to them" by many philosophers (II. 321). After a detailed exposition, on the lines laid down by Dr. Whitehead, of the limits and relative justification of the rationalist theory of Space-Time, he shows how a thoroughgoing historical view of nature has come to replace the abstract and geometrical, and how contingency and individuality are discernible in every quarter of the universe from the electron to man. The world of becoming is revealed as a world, not of mere becoming, but of *γένεσις εἰς οὐσίαν*, *i.e.* becoming that tends to stable activity of self-expression as its end. God in His perfect self-contained individuality furnishes the solution of the tension "Becoming and time . . . should be thought of, not as the logical contraries of being and eternity, but as depotentialized, imperfectly communicated, being and eternity" (II. 366). "We are temporal, not because there is a foreign element in our being which does not come from God, but because what there is in us is not the whole plenitude of the riches of God's being" (*ibid.*). "When we say of God that He, and He only, is strictly and fully the eternal being . . . , we do not mean that there is nothing in this life in any way answering to what we experience as movement and process; we mean that the experience is there, but that in Him it is not, as it is in

varying degree with all His creatures, one of being more or less at the mercy of circumstance; there is nothing in Him like what we experience as movement to an unknown or half-known goal" (II. 365). And, at the close of the same chapter, Professor Taylor, dealing with the difficult problem of Divine Impassibility, stretches this admission of movement into God's nature to the length of ascribing to Him an emotional life, which, in its freedom from transition from a lower to a higher grade of activity, transcends our own, just as, in the way of knowledge, our discursive processes are transcended in His perfect intellectual intuition (II. 371).

(3) Both these points raise a problem, to which Professor Taylor's views on epistemology are highly relevant. "It is a grave mistake to assume," he writes in his closing chapter (II. 378), "that a theory of knowledge is, by itself, a sufficient basis for a metaphysical philosophy." For "we are not related to the real as spectators to a picture," but as actors within an unfinished drama; and the drama presents contingent features which resist inclusion within the *cadres* of logical categories. Alternative metaphysical interpretations, as Kant himself saw, are always possible, and "the choice between them has to be made on other than purely speculative grounds." "It would be disloyalty to reason to deny that the real world is one in which the prosecution of science is possible; it is not disloyalty to hold that the world is something other and more than a mere field for the elaboration of science." Religion with its specific experiences can claim autonomy and the right to think out its own *data* unfettered by any categories imposed from without. There is room for a genuine knowledge that is the outcome of religious faith.

This doctrine is very important, especially in regard to the possibility of knowledge of God. Professor Taylor is firm in his refusal to base religious faith merely on emotion, to the exclusion of intellectual apprehension of reality. We wish he had developed more fully his suggestion that "there may be truth that is not propositional," difficult as it may be to make room for it in a metaphysical scheme (II. 386). We have seen how constantly he recurs to the "way of analogy," which was formulated with such precision by St. Thomas; it is his obvious refuge from the *via remotionis* and its confession of "absolute nescience" of the Divine nature. While we are wholly with him in his desire thus to secure positive knowledge of God, we feel a little uneasy at his silence on the difficulties that beset his path. There is need for a criterion of such analogies, to save from illegitimate anthropomorphism: and where can the criterion be found? Again, what proportion is there between the Creator and the creature, the infinite and the finite? It is hard to justify an analogy, where one term is incommensurable with the remainder. Nor does the word *eminenter* furnish a very satisfactory solution; it states a problem rather than answers it. What we seem to need is an attribute possessed alike by God and man in widely differing measure, but without difference in kind. We cannot assert this either of goodness or of intelligence or of power; is it possible to follow a hint given by St. Bernard and assert it of love? In that event, the term love, alike in God's love for man and in man's love for God (and for God alone), would be not merely analogous, but univocal, in meaning. We should be provided with a positive standard in the light of which we could test all further predications.

To conclude: Professor Taylor shows us in these volumes that the *Dieu des pauvres et des humbles* is also the *Dieu des savants et des philosophes* (II. 320). The supposed contrast vanishes before a reasonable metaphysic. We have done scant justice to the breadth and penetration with which Professor Taylor handles this high argument. We have barely noticed his frequent and acute criticisms of other philosophers, notably of Plato, Spinoza, and

Kant among the classics, and among the moderns of McTaggart, M. Bergson, and Professor Whitehead. We have said nothing of his treatment of the problem of evil, of his tentative but arresting excursions into eschatology, or of the discussion of contingency and freedom that forms the Appendix to the second volume. He has provided a storehouse of speculative treasure, alike for the philosopher and the theologian. Above all, he has succeeded where, we are sure, he most desired success. Thanks to his book, it will no longer be possible for a serious metaphysic to ignore the claims of revealed theology to give knowledge of the nature of the real.

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The Right and the Good. By W. D. Ross, M.A., LL.D., Provost of Oriel College, Oxford. (Oxford: at the Clarendon Press. 1930. Pp. vi + 176. Price 10s. 6d.)

This is a masterly essay on what is perhaps the most difficult group of problems in moral philosophy. It is masterly alike in design, in argument, and in expression. Dr. Ross states his views definitely, but without a trace of dogmatism; he says precisely what he means, and bases his conclusions on careful examination of the evidence and with full discussion of relevant objections. He never loses sight of Aristotle's counsel to attach weight to the judgments of men of trained moral character who are not professed philosophers, allowing that there is much in "what we really think" that deserves to rank as knowledge. Abstract principles are illustrated throughout by examples drawn from concrete moral experience. The style is condensed, but never at the cost of clarity, and is singularly free from technicalities. The book does not make easy reading, for the author is all out for "the rigour of the game," and eschews the diffuseness and irrelevancies with which so many writers on ethics seek to edify the public. But the serious student, be he philosopher or no, will find it an invaluable source of enlightenment; if we may use a phrase which Dr. Ross himself shows to be inaccurate, it is a model of what an ethical treatise "ought to be."

Chapters I and II deal with "Right." Subjectivist and sociological explanations are briefly dismissed, on the ground that they have been adequately countered by other writers. The "Ideal Utilitarianism" of Dr. Moore, on the other hand, is criticized in detail, especially in its later form, according to which productivity of the greatest possible good is held to be the sole determining ground of the rightness of an act. The decisive objection to this theory is its implication "that the only morally significant relation in which my neighbours stand to me is that of being possible beneficiaries by my action" (19). Is this even plausible? Dr. Ross admits, of course, that there is a *prima facie* obligation to promote good, and that in certain situations this obligation may be paramount; but it fails "to do justice to the highly personal character of duty" (22), or to explain why we ought to pay a debt or keep a promise, even in the face of counter "optimific" probabilities. The alleged synthetic connexion between "right" and "productive of most good" is neither self-evident, nor deductively demonstrable, nor capable of inductive establishment. Dr. Ross agrees with Professor Prichard, to whom he acknowledges his indebtedness in the Preface, that the concept of Right, like that of Good, is indefinable and ultimate.

Professor Prichard's influence may also be discerned in two positions set forth in these opening chapters, which call for closer consideration. (I) The rightness of an *act* is sharply distinguished from the moral goodness of an *action*,

on the ground that the former is wholly independent, the latter wholly dependent, on the motive. (We note in passing a slight ambiguity in Dr. Ross's exposition: is it the whole action, *i.e.* "the doing of the act from a certain motive," or merely the motive, that is morally good or bad?) It follows that a right act may be a morally bad action, a wrong act a morally good one, and that "nothing that ought to be done is ever morally good" (4). This doctrine carries with it far-reaching consequences; *e.g.* as regards the distinctions of justice and benevolence, benevolence and beneficence (53), the differences of types of moral judgments (101–102), and the denial that right is a form of value (122, 132–133). The present reviewer has stated his objections to it in a recent number of this *Journal*, and will only refer here to the two arguments put forward by Dr. Ross. (*a*) "Ought" implies "can"; but "it is not the case that I can by choice produce a certain motive in myself at a moment's notice, still less that I can at a moment's notice make it effective in stimulating me to act" (5). The case, however, is not so simple as it seems. Are we not here up against the whole problem of moral freedom, and particularly that aspect of it which has received all too little attention from ethical writers, how we can secure effective control of the passions by reason. The difficulty is no greater than that of making myself act rightly on Dr. Ross's interpretation of a right act. In his closing chapter (VII, on "Moral Goodness") Dr. Ross explains "the moral goodness both of actions and feelings" as arising from "their proceeding from a certain kind of desire" (156). Is it the case that desires are less capable of control than acts? However difficult the task, the control of desire is surely the main business of the moral life. And what sense is there in calling an action *morally* good, if it is not possible to command the motive (or desire) on which the goodness depends? The truth seems to be that on any view of the relation of motive to obligation we are confronted with a contradiction intrinsic to moral experience. "Ought" implies "can"; yet, in any concrete moral action, duty remains unfulfilled. The discussion of this antinomy would lead, as it led Kant and Bradley, into the field of metaphysics, and Dr. Ross rigorously avoids all such excursions. When, however, he comes to ask what in an individual situation it is obligatory to do, and takes the case of the duty to return a borrowed book to a friend, he insists that the duty has not been done unless we actually secure the book's return, despite the fact that certain steps in the process lie outside of our control. The book may be "destroyed in a railway accident or stolen by a dishonest postman." "We get the curious consequence that however carelessly I pack or dispatch the book, if it comes to hand I have done my duty; and however carefully I have acted, if the book does not come to hand I have not done my duty" (45). What then becomes of the principle that "ought" implies "can"? (*b*) Dr. Ross's second argument is a *reductio ad absurdum*. "If the sense of duty is to be my motive for doing a certain act, it must be the sense that it is my duty to do that act. If, therefore, we say "it is my duty to do act A from the sense of duty," this means "it is my duty to do act A from the sense that it is my duty to do act A." And here the whole expression is in contradiction with a part of itself. The whole sentence says, "It is my duty to—do—act—A—from—the—sense—that—it—is—my—duty—to—do—act—A." But the latter part of the sentence implies that what I think is that it is my duty to—do—act—A simply" (*ibid.*). Are we not here again faced by the antinomy which we said was inherent in all moral experience? No particular dutiful act A is adequate to express the principle of duty universal which is the moral motive. If I have any moral knowledge at all, I *know* that after doing what I *call* my duty in a given situation (and it is only by thus acting that I can in any measure realize the universal), I remain, for all my effort,

an unprofitable servant. I have *not* done what it was my duty to do. Again, when the motive is particularized as my sense that it is my duty to do act A, it merges in the intention, in what I will to do. Thus if the act be taken, as it should be taken, to mean the inner act of will, exclusive of features in the overt act which lie beyond our control, difference of motive entails difference, not merely in the *action*, but in the *act*. The error which results in so much argument "at cross-purposes" (156) lies not in the failure to distinguish moral goodness from rightness, but in the illegitimate severance of abstract motive from an equally abstract act. The distinction between what is right and what is morally good rests not, as Dr. Ross holds, on the exclusion of motive from the one and its inclusion in the other, but on two quite different grounds. The judgment of moral goodness is passed (*a*) on a system of acts or on standing desires and dispositions to act, and (*b*) from the standpoint, not of the man acting, but of himself or another *theoretically* reviewing the action, as an impartial spectator, after the event. The strict and concrete moral judgment is that of "right."

(II) We have seen that the beneficiary relation is not the only one that has moral significance. There are others, *e.g.* of creditor to debtor, child to parent, friend to friend, which generate *prima facie* obligations (19). Dr. Ross attaches much importance to these *prima facie* or conditional duties, giving an excellent classification of them and of the ways in which they arise. They are not actual or absolute duties; they are general, not particular; actual duties are toti-resultant attributes of an act, belonging to it in virtue of its whole nature, while these are parti-resultant, belonging to an act in virtue of some one component of its nature (28). They are not arbitrary, but objective facts involved in an element of the practical situation, and bearing witness to the moral order which "is just as much part of the fundamental nature of the universe . . . as is the spatial or numerical structure expressed in the axioms of geometry or arithmetic" (29–30). Moreover, these *prima facie* duties are self-evident and strictly *known* (Dr. Ross is very insistent upon this), whereas particular duties are neither self-evident nor deducible from self-evident principles, but matters of probable opinion. "*ἐν τῇ αἰσθήσει ἡ κρίσις*. This sense of our particular duty in particular circumstances, preceded and informed by the fullest reflection we can bestow on the act in all its bearings, is highly fallible, but it is the only guide we have to our duty" (42). In his desire to vindicate a place in ethics for moral *knowledge*, Dr. Ross seems to us to exaggerate the importance of the abstract principles which alone we can be said to know. They enter doubtless into the theoretical review of the practical situation antecedent to the decision as to what we ought to do. But subsumption of cases under general principles is normally very subordinate to the particular factors in a situation; what counts, for instance, is my peculiar obligation to A rather than the general obligation of gratitude to a benefactor. In grave moral crises we often do not know our duty till we are plunged in the specific situation; the vision, when it comes, comes as a surprise, unforeseeable by ourselves or others.

We have dwelt on the matter of the two opening chapters because the views there expressed are of special importance for an understanding of moral action. The rest of Dr. Ross's book (save for two *appendices* on "Rights" and on "Punishment," and the concluding chapter on "Moral Goodness") carries us beyond the field of morality proper to a discussion of the whole problem of Value. Space forbids us giving to these chapters the attention they richly deserve. The analysis of the varied uses of the term "Good" in Chapter III is quite the best we know. In defining "intrinsic good," Dr. Ross engages in one of the "private fights" with Dr. Moore, which, despite a wide

measure of agreement, occur at intervals throughout the volume. The issue in this case is the applicability of the principle of organic unities to the discrimination between "intrinsic" and "ultimate" goods. Chapter IV (on the "Nature of Good"), the longest in the book, is largely taken up with criticism of Professor Perry's and Professor Urban's theories of value. Dr. Ross himself rejects all relational interpretations, whether ontological (*e.g.* of coherence between elements in the object, or, again, of fulfilment to tendency) or psychological (Perry), maintaining that goodness is a consequential property, "that anything that is good must be good either by virtue of its whole nature apart from its goodness, or by virtue of something in its nature other than goodness" (79). Value is not, as Professor Urban holds, an objective, though only objectives, or, preferably, facts (since objectives are no real entities) possess value (111–113). Moreover, the value-judgment carries an existential implication; "actual value presupposes actual existence, and conditional value supposed existence" (114). Dr. Ross, it will be seen, has no truck with subjectivism, either in the case of right or in that of good. The claim of beauty to possess intrinsic value gives rise to a very interesting discussion (124 ff.). Beauty is certainly not subjective, nor, being sensuous, purely objective; it is grounded on the power things have of producing in minds the experience of æsthetic enjoyment. Dr. Ross, we may note, accepts the traditional view that secondary qualities are relative to the percipient. Rightness, on the other hand, is intrinsic, but not a value; an act only has moral value when done from a good motive, *i.e.* as a morally good *action*. The last half of the chapter also contains another "private fight" with Dr. Moore, this time on the distinction between difference of intrinsic nature and difference of quality, and on the sort of necessity by which two things that are exactly alike *must* have the same value.

In Chapter V the author asks "what kind of things are intrinsically good?" His answer is brief; he falls back, as does Dr. Moore in *Principia Ethica*, on his happy gift of judicious intuition. Only states of consciousness possess intrinsic value; and, among these, virtue, pleasure, the apportionment of pleasure to the virtuous, knowledge and, in a less degree, right opinion, together with their combinations (*e.g.* æsthetic enjoyment and the mutual love of persons). Chapter VI is concerned with the commensurability and grading of these intrinsic goods. The main conclusions are these: (*a*) Pleasures are commensurable, and "the conditions for rough commensuration are sometimes fulfilled"; further, "the difference between physical and mental objects in respect of commensurability is not so complete as it might appear" (143). (*b*) "The intrinsic value of a state of knowledge or opinion seems to depend on three elements: (i) the degree of its groundedness on fact, (ii) the degree to which the strength of conviction with which it is held corresponds to its groundedness, (iii) the generality of the fact known, or believed to exist" (148). Inferential knowledge must not be rated above non-inferential, or *vice versa*. On count (iii) Dr. Ross appears to hold that right opinion in metaphysics (where little knowledge is possible) may surpass in value such departmental knowledge as can be obtained in, say, chemistry. Finally (*c*), pleasure is vastly inferior in value to knowledge; and both knowledge and, *a fortiori*, pleasure are not merely inferior to, but incommensurable with, virtue. No increase in knowledge can atone for failure to do our duty or for deterioration of moral character. Dr. Ross explicitly disclaims any intention of advocating asceticism, but it is startling to find him here falling into line with a celebrated dictum of Newman. The chapter, already referred to, on "Moral Goodness," in which he distinguishes and balances in value the various morally good desires, and discusses both vicious motives and the problem of

co-operating motives, brings to a close a book which forms a notable contribution to the living study of moral philosophy.

W. G. DE BURGH.

The Revolt against Dualism: an Inquiry concerning the Existence of Ideas. By Arthur O. Lovejoy. (London: George Allen & Unwin Ltd. 1930. Pp. xii + 325. Price 15s.)

In selecting "The Revolt against Dualism" as the theme of his *Carus* lectures, Professor Lovejoy has certainly chosen a problem of great interest to contemporary philosophers. The result is a book of considerable importance. It should do much to aid us in thinking clearly with regard to the topics discussed. Unfortunately, the style in which the book is written makes difficult reading; the sentences are apt to be excessively long, with parenthetical interruptions of an irritating kind. But Professor Lovejoy's logical method is wholly admirable, and the book well repays the pains of reading it.

"It is," says Professor Lovejoy, "primarily with hypothetical questions that philosophical inquiries ought, I think, to be concerned. Philosophy would proceed with a somewhat steadier gait, and agreement among philosophers would come about more rapidly, if they would oftener put the problems they discuss, and especially those they first discuss, expressly in this form: If certain things (which some philosophers or other men believe) are provisionally taken as true, what other things must or may be true? A great part of philosophy, in other words, should consist of attempts to determine what sets of propositions, in certain fields of investigation, properly go together" (p. 257). Only by the adoption of such a method could philosophy be made, as surely it should be made, a properly coöperative effort. The time for elaborate metaphysical constructions seems hardly yet to have arrived. The gain to philosophy would no doubt be considerable if philosophers were content to leave to popular scientists the ambitious construction of imposing systems, and were to devote themselves to the patient following-out of the consequences of plausible hypotheses. This is the method that Professor Lovejoy has in the main adopted in this book. He has sought to show that non-dualistic hypotheses lead to consequences that are unplausible, so that these consequences throw doubt upon the initial hypotheses. The method calls for much detailed and careful analysis. Of such analysis Professor Lovejoy is a master. Whether the outcome of his inquiry be acceptable or not, no one could follow his arguments without learning much to his profit. The present reviewer at least has been forced to reject some favourite prejudices which cannot withstand Professor Lovejoy's analysis.

In the short space at the disposal of this review it is impossible to do justice to the contents of this book or adequately to express the criticism to which it may be subject. All that can be done is to indicate the nature of Professor Lovejoy's argument and to suggest one important defect which the present reviewer finds in his treatment. The basis of Professor Lovejoy's argument is the acceptance of the common-sense view of knowledge as, in the main, to be justified. Thus he agrees that experience yields objects that are relatively permanent, independent of the observer who may be said to know these objects, and common to many such observers. But at the same time common sense admits the diversity of what is "immediately known"—the datum or content—from the object of which knowledge is claimed. Accordingly the most plausible initial hypothesis is that of epistemological dualism, viz. some form of the theory of representative ideas. Further, common sense unhesitatingly assumes the diversity of the physical and the psychical.

But, as Professor Lovejoy points out, it is not immediately evident that the former, *i.e.* epistemological dualism, implies the latter, *i.e.* psychophysical dualism. Reasons for denying the one are not necessarily reasons for denying the other. It is, however, characteristic of twentieth-century philosophy to revolt against both types of dualism. In the opinion of Professor Lovejoy this revolt has definitely failed.

The first two lectures are devoted to an admirably clear statement of the nature of Cartesian and Natural Dualism, and to the difficulties to which these doctrines give rise. There follow two lectures dealing with the theory of "Objective Relativism"—the name given by Professor Murphy to a theory that in the main derives from Whitehead. In his discussion of this theory Professor Lovejoy calls attention to the extreme ambiguity of the word "relativity," now so frequently bandied about by philosophers and physicists. He well says: "One of the things most to be desired—though doubtless hardly to be expected—in the discussion not only of the philosophical doctrine we are now considering, but also of the physical theory of relativity, is the discontinuance of the use of this ambiguous word, and the substitution in each case of one or another of the expressions 'caused' or 'conditioned by,' 'respective to,' or 'appearing from the standpoint of.' The present fashion of employing a single term masks the fact that different sorts of 'relativity' are in question in different parts of the theory or in different interpretations of it" (p. 141). There can be no doubt that the adoption of some such terminology would conduce to greater clearness. The criticism, in Lecture V, of Whitehead's denial of simple location makes evident certain difficulties in Whitehead's doctrine due to his assumption that all relations are internal. Not all Professor Lovejoy's criticisms seem to the present reviewer to be well founded, but he has undoubtedly pointed out difficulties that are quite fundamental. His criticism is as timely as it is searching.

Lectures VI and VII are devoted to a detailed discussion of Mr. Bertrand Russell's various attempts to bring about a "unification of mind and matter." These lectures contain material that will be of interest to all students of Mr. Russell's philosophical writings. But Professor Lovejoy's criticism here suffers from a serious defect, namely, his failure to take any notice of Mr. Russell's theory of descriptions. There are difficulties enough in Mr. Russell's views, but Professor Lovejoy has added a quite gratuitous difficulty owing to his failure to understand what Mr. Russell means by a 'logical fiction.' It is true that Mr. Russell's habitual carelessness of expression, and the unfortunate terminology in which he sometimes chooses to express himself, do constitute a serious obstacle to the understanding of his doctrines. Nevertheless, an understanding of what precisely Mr. Russell means by 'logical fiction' is an essential prerequisite to any final criticism of his views.

In the last two lectures an attempt is made to review the problem of knowledge in the light of the considerations adduced in the preceding lectures. It is impossible to summarize them here. Attention may be called to the acute criticism of Eddington's view that the external world consists of mind-stuff, and to some interesting remarks with regard to the principle of indeterminacy.

The conclusion to which Professor Lovejoy is himself finally led is stated as follows: "If you are to believe in a real physical world . . . you must necessarily be a dualist in both senses of the term; you must hold (*a*) that there are given in experience particular existents which are not parts of that world, and you must hold (*b*) that whatever knowledge of real objects you have is indirect or representative, that the datum whereby you know an object is not identical with the object known" (p. 303). This datum is said to be "essentially of the nature of 'ideas,' as Descartes and Locke (for the most part)

used that term" (p. 264). Our knowledge of the external world is mediated through these ideas. In the opinion of the present reviewer this conclusion is not warranted. It is the cardinal defect of Professor Lovejoy's treatment that he nowhere attempts to analyse the notion of *indirect knowledge*. He simply takes it for granted that *to know indirectly* is to know mediately, and that *to know mediately* is to know through representative ideas. Moreover, "representative" seems to be taken here as being equivalent to "resembling," although Professor Lovejoy has also insisted that these "ideas," or data, are "destitute of the essential properties and relations implied either by the historic concept of the 'physical' or by the contemporary physicist's concept of it, and possess properties which physical things lack" (p. 264). But may not knowledge be indirect without being representative or mediated? Professor Lovejoy does not consider the possibility. On the contrary, his acceptance of a theory of representative ideas is based simply upon the discovery that knowledge of physical objects is not direct. The alternative, namely, that knowledge may be indirect without being either inferential or representative, is surely one that merits consideration as a plausible hypothesis.

L. S. Stebbing.

Our Knowledge of One Another. By C. C. J. Webb, F.B.A. (London: Humphrey Milford & Co. 1930. Pp. 18. Price 1s. 6d.)

In this, the Hertz Philosophical Lecture for 1930, Professor Webb treats of a problem which, as he notes at the outset, has received in the past less attention from philosophers than those of the nature of self-consciousness or of our knowledge of the external world; though the recent treatment of it by Professor Alexander (in *Space, Time and Deity*, Vol II), Dr. Broad (in *The Mind and its Place in Nature*), and Mr. C. Delisle Burns (*The Contact between Minds*), has done much to redress the balance (a later discussion still is that of Mr. W. W. Spencer's *Our Knowledge of Other Minds*,[1]) Dr. Webb's excellent lecture is too short to allow him to deal with more than one or two aspects of the question.

He begins by rejecting, and here he is on unassailable ground, the theory given in its naïvest form by J. S. Mill, that awareness of other persons is to be accounted for by a process of analogical reasoning, inferring the presence of an "other" mind from outward reactions similar to our own. Such an inference assumes that we are already outside the solipsism from which it professes to explain our escape. The experience of intercommunication "presupposes the existence of a mutual *rapport* between persons"; but if we have granted this "spiritual *rapport*," our knowledge of one another may be said to be "mediated" by the perception of external happenings.

The last part of Dr. Webb's lecture is concerned with religious experience. Here he follows Professor Alexander in denying that there is anything in the "response" of Deity strictly analogous to the response of a human person. The differences between the two relationships are: (1) that whereas in human personal intercourse it is only the perception of objects of a certain kind that mediates to us the knowledge of other persons, in the religious experience *any* object *may* have this mediating function with reference to its object, *i.e.* Deity; (2) that this object is not a mere *fellow* being, but there is attributed to it "a mystical intimacy with us."

I have only space for two very curtly stated comments. First, I do not think it can be maintained (though the error, if error it be, is on the right side)

[1] An excellent, rather less recent, treatment of the subject by a German thinker is to be found in the late Professor Max Scheler's *Zur Phēnomenologie und Theorie der Sympathiegefühle*.

that "our knowledge of one another would seem to be anterior in time to our consciousness of self as such," though it *is* true, as Dr. Webb later says, that "reflection on oneself as separate from one's fellows is subsequent to our recognition of them." These two statements are not, of course, equivalents. We may recognize a thing without reflecting upon it, and, anyhow, recognition must come first. I should prefer to say that self- and other-consciousness are born together, that self-knowledge and fellow-knowledge grow together and illumine one another by a process of give-and-take, but that reflective realization of one's own selfhood is certainly much later than the simple recognition of other selves.

Second, I do not see why Dr. Webb accepts Alexander's negative interpretation of the experience of Divine "response." The sort of Theism that Dr. Webb puts forward does not, to say the least, seem incompatible with a belief in a more specific form of revelation and self-expression on the part of the Deity than would be consistent with Dr. Alexander's own theology.

J. W. Harvey.

The Mysterious Universe. By Sir James Jeans. (London: Cambridge University Press. 1930. Pp. viii + 154. Price 3s. 6d. net.)

This book is an expansion of the Rede Lecture given by the author at Cambridge in November last, and is meant to be read as a sequel to *The Universe Around Us*. There is a widespread conviction, he says, that the new theories in astronomy and physics are likely to produce an immense change in our outlook on the universe as a whole and on the significance of human life. Since this is ultimately a subject for philosophical discussion, Sir James Jeans has set himself the task of stating in simple language what physical science has to say as regards relevant facts and hypotheses, for it is only after this that discussion may legitimately pass into the realms of philosophy.

The book is therefore concerned in the first four chapters with an account of The Dying Sun, The New World of Modern Physics, Matter and Radiation, Relativity and the Ether. In the fifth and final chapter, called "Into the Deep Waters," Sir James Jeans gives his own interpretation of present tendencies in physical science, without claiming to be a philosopher "either by training or inclination."

Taking, then, the first four chapters, we find outlined in Sir James Jeans' best style those advances in physical and astronomical theory which have come to the front recently and stimulated public interest. The author is cautious enough to admit that the "apparent capriciousness in nature may be found, in the light of fuller knowledge, to arise out of the inevitable operation of the law of cause and effect" (p. 22). He thinks that the puzzle of the notion of causation, and whether it can be applied rigidly to the ultimate constituents of the universe, lies ultimately in the problem of time. "It is always the puzzle of the nature of time that brings our thoughts to a standstill. And if time is so fundamental that an understanding of its true nature is for ever beyond our reach, then so also in all probability is a decision in the age-long controversy between determinism and freewill" (p. 30).

There are three errors: one minor one involving a miscalculation of the probability of disintegration of radium atoms (p. 21); another with regard to Einstein's universe, whose size one is led to believe depends on the quantity of matter in it (pp. 60–61) and not on the mass-density; and a third with regard to Fig. 2, Plate II, which is described in the text as produced by electrons shot through a tiny aperture; this has not yet been done.

It is, however, with the last chapter that philosophers are chiefly concerned, in which Sir James Jeans puts forward tentatively his philosophical speculations. He seems to agree with those who "would hold that, from the broad philosophical standpoint, the outstanding achievement of twentieth-century physics is not the theory of relativity, with its welding together of space and time, or the theory of quanta, with its apparent negation of the laws of causation, or the dissection of the atom, with the resulting discovery that things are not what they seem; it is the general recognition that we are not yet in contact with ultimate reality" (p. 127). What is now being realised by some scientific men is that their knowledge of the world is only symbolic. This, of course, they would have known long ago if it had not been for that lofty disdain of philosophy which characterized so many scientists of the latter half of the nineteenth century, and which is still all too common to-day. Scientists are now tardily inclined to endorse Locke's conclusion that "the real essence of substances" is forever unknowable. They used to think that the universe was a vast machine: that, of course, they were not entitled to do; what they were entitled to assume was that the 'reality' behind the 'pointer-readings' they observed was machine-like, *i.e.* something whose parts were in strict causal relationship. Nowadays the suggestion is that the 'reality' behind the 'pointer-readings' cannot be machine-like, since there may not be strict causation.

Sir James Jeans thinks that since the behaviour of Nature appears to be best described by mathematical relations of a kind known as 'pure,' therefore the reality behind these pointer-readings, which constitute the variables in the equations, must behave like the mind of a pure mathematician. (This raises the very difficult question, as the author admits, as to whether any branch of mathematics is really 'pure' and composed of concepts divorced entirely from experience.) Sir James then goes on tentatively to suggest that if Nature behaves like a mind, and a mind consists of thoughts, then perhaps we may best regard Nature as made up of thoughts, and (after a quotation from Berkeley) these thoughts as occurring in a universal mind, that of the Great Architect of the Universe, who strongly resembles a mathematician.

The concept of Ineffable Purity must, it seems, be interpreted mathematically; and the uniformity of nature merely "proclaims the self-consistency of this mind" (p. 140). This view also explains why physics is becoming so abstract, and further "implies, of course, that the final truth about a phenomenon resides in the mathematical description of it" (p. 140). Any construction of models or pictures to illustrate the formulæ "is not a step towards, but a step away, from reality "(p. 141).

This, then, represents briefly, and rather inadequately, the philosophical tendency of modern physics as interpreted in a brilliant and stimulating way by one of the foremost mathematical physicists of the day.

There is an aspect of this book, however, which is wholly deplorable, and that is as an exposition of the scientific spirit and method. There are many statements which it is hard to believe were written by a Secretary of the Royal Society. On page 15 we are told, "Confronted with a natural world which was to all appearances as capricious as himself, man's first impulse was to create Nature in his own image"—a dogmatic statement ignoring the work of scientists who have given a lifetime of study to the question of early cults and beliefs, and the doubt which exists as to whether magic based on simple association may not be earlier than the 'projection' view. Again, on page 23, in discussing cosmic radiation, the author recalls the suggestion that this may have biological effects, and may have "turned monkeys into men." This sort

of phrase one expects in the popular press, but surely one is entitled to something more accurate from a Secretary of the Royal Society. Yet again, on page 29, "To-day science . . . has no longer any unanswerable argument to bring against our innate conviction of freewill." As though the work of Freud had no bearing on the question; as though Pavlov's experiments were beneath notice—but then astronomers are above sex and saliva! And finally, the ludicrous ending to the chapter on "Matter and Radiation"—"the whole story of its creation (the universe) can be told with perfect accuracy and completeness in the six words: 'God said "Let there be light".' "

Scientists, of course, know what to discount, but the sales of this book are reaching the hundred thousand class, and its effect on the public must be considered. It is in this regard that Sir James Jeans has been severely criticized in the leading scientific weekly.[1] No wonder that Sir James is recommended from the pulpit; no wonder that Sir Arthur Eddington is quoted by the page in spiritualistic journals; and the statement that physics is now mystical has penetrated into such a stronghold of conservatism and respectability as the *Law Quarterly Review*.[2]

It does seem that, by the nature of their profession, astronomers attain a certain cosmic aloofness which enables them to ignore the work of scientists and philosophers in other fields than their own, and it is for this reason that they are the last people to whom the public should look for authoritative views on science, and that their philosophies, such as they are, are practically worthless. As H. L. Mencken shrewdly observes, speaking of writers of this sort:[3] "All they really prove is that a man may be a competent astronomer or physicist and yet no scientist, just as Blind Tom was a competent pianist without being a musician."

The publishers announce in the daily press that Miss Tallulah Bankhead has been pleased to observe that this book contains What Every Girl Should Know. We had not suspected Miss Bankhead capable of such profound philosophical criticism; for ourselves, we can only say that we entirely agree.

G. B. Brown.

Franciscan Philosophy at Oxford in the Thirteenth Century. By D. E. Sharp, M.A., D.Phil. (Oxford University Press. London: Humphrey Milford. 1930. Pp. viii + 419. Price 21s. net.)

This work, for which Dr. Dorothy Sharp has been awarded a doctorate in the University of Oxford, is unique of its kind, and cannot but be of the greatest use to students desirous of acquiring something more than a passing acquaintance with thought in mediæval Oxford. Dr. Sharp has devoted years to a painstaking and detailed examination of writings, many of which exist only in manuscripts. She has summarized their contents under various heads, such as *matter and form, cosmology, psychology, angelology, natural theology*. Where the matter was of special importance she has transcribed long passages word for word, and throughout, in summarizing, has given copious and exact references, not only to manuscripts or printed works, but also to relevant passages in the works of Aristotle. The work as a whole is heavy reading, but if anyone wants to know what kind of philosophy was being taught in Oxford during the latter half of the eighteenth century, there they will find it, and, should they desire further information, will discover where it is to be found.

Dr. Sharp confines herself to the writings of six philosophers, all of the same

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[1] *Nature*, November 22, 1930. [2] January 1931. [3] *Treatise on the Gods*, p. 307.

school of thought, and all of them, save one, Franciscans. The exception is Grosseteste, first Chancellor of the University, and later Bishop of Lincoln. He is rightly placed at the head of the list, for, though not a Franciscan, he was their first lecturer in theology, and had a very great influence on the subsequent development of the School. Whether Richard of Middleton should have been included is more open to question. It is possible, but by no means certain, that he was an Englishman. He may have studied at Oxford, but the first person who affirmed this lived two and a half centuries later. His closest associations are with Paris, where he taught, and of which University he was a Master. He would seem, too, with respect to several points which were then controverted, to have approached far nearer to the Thomist doctrine than did most Franciscans of the Oxford School. Thus, with St. Thomas, he rejects (1) the ontological argument, (2) the Augustinian theory of *rationes seminales* immanent in matter, and (3) the doctrine—fundamental in Augustinianism —that divine illumination is the sole source whence we derive knowledge of eternal and necessary truth. He admits, too, that matter is, if not the principle of individuation, at least its *sine qua non*, and again, that in existent being there is *compositio ex essentia et actuali existentia*, while his account of our knowledge of God approximates yet closer to the Thomist position.

Drawn by the coherence of Aristotelianism, by its apparent success in analysing and interpreting nature, and by the fact that many of the conclusions to which it leads are similar to those which can be deduced from the Christian revelation, Franciscan, Dominican, and secular alike adopt Aristotelian principles, and seek to adapt them to another tradition, inherited from Plato, Augustine, Bœthius, and Anselm. Were one to blue-pencil in Dr. Sharp's book the doctrines which are derived from Aristotle, at least one-half of her book would be blue-pencilled. All admit that in created being there is potentiality or capacity for being and change, as well as actual character or form; that in corporeal being, form, save in man's case, is *educed* from the potentialities of matter; and that this eduction involves process and adaptation, though the emergence of the form itself is a *mutatio*, not a *motus*, and so is instantaneous; and again, that forms may recede into the potentiality of matter, whence they emerged; and that in the case of compounds the elementary forms remain not only *in potentia*, but *virtualiter*. Their account of the generation of living beings is also in all essentials Aristotelian, as Dr. Sharp is careful to point out. So, too, do they follow Aristotle in their account of how the universal is derived from perceptual experience. It exists in the thing, but not *as* a universal. In the thing its universality is but potential; it becomes actual only when apprehended by mind. Dr. Sharp does indeed quote a passage from Scotus on p. 297, in which he seems to affirm that the universal has being as a universal apart from mind; but he is here stating, I think, not his own doctrine, but a consequence deducible from a doctrine which he rejects.

Franciscan philosophy at Oxford is Aristotelian from the very outset, but its Aristotelianism at first is by no means so thoroughgoing as is that of the Dominicans in Paris. In its philosophy of nature it clings to the Augustinian doctrine of *rationes seminales*, existent in matter, and ever seeking to express themselves. In its theory of knowledge also it remains faithful to Augustine, for it does not admit that all knowledge is derived from perceptual experience: our knowledge of necessary and eternal truth presupposes divine illumination. It maintains, too, against Aristotle and St. Thomas, that it is possible to prove philosophically, not only that the universe is finite in extent, but also that it had a beginning. When we reach Scotus, however, we find both the cosmological theory of *rationes seminales* and the epistemological doctrines of illumination repudiated. Nor does Scotus admit that reason can either prove or

disprove the eternity of the world. He is at one with St. Thomas here, as he is at one with him also in asserting the immateriality of angels and of the human soul, and again in his method of proving the existence of God; for though he does not deny the validity of the ontological argument, he prefers *a posteriori* arguments.

Dr. Sharp rejects the authenticity of a work commonly attributed to Scotus, namely the *de Rerum Principio*, and replies to the arguments by which Dr. Harris has sought to defend it. She might have added that since the discovery of the MS 95 of Todi, containing the first fifteen questions with which the work deals, it has become practically certain that the *de Rerum Principio* is the work of Vitalis a Furno. Yet, in spite of the fact that Dr. Harris in the second volume of his *Duns Scotus* relied largely on this spurious work, the conclusion which he reached is substantially the same as that now reached by Dr. Sharp. St. Thomas and Scotus are both thoroughgoing Aristotelians, and in essentials agree: it is only as to details that differences arise, save in the case of the real distinction between essence and existence, which Thomists hold to be fundamental in their system. For Scotus matter is knowable apart from form, and might conceivably exist apart from form, though in fact it never does. St. Thomas denies this, while Scotus on his part rejects the Thomist theory that form is individualized by matter. Scotus teaches that there exists a bodily form distinct from the soul, but, on the other hand, that faculties are not distinct from the soul. St. Thomas denies the existence of a *forma corporeitatis*, but affirms a real distinction between faculties and soul. And on each of these points Scotus is supported by the teaching and arguments of his predecessors, as Dr. Sharp has shown. I do not think she is right, however, in saying (p. 287) that Scotus anywhere identifies active and passive potency with *potentia objectiva et subjectiva*, or that he taught *actio in distans* (p. 287), or that he held that God could not know the contingent (p. 361). He teaches merely that God's knowledge of the future is not of the same kind or order as his knowledge of necessary truth; and that light, since it brings about no substantial change in the medium which it traverses, uses the medium *as if* it were not a medium.

If Richard of Middleton is to be regarded as an Oxford Franciscan, he must be classed with Scotus as a thoroughgoing Aristotelian. Pecham, on the other hand, belongs to the earlier school, and it is interesting to see how his carefully elaborated arguments for the immortality of the human soul are, upon examination by the more sceptical Scotus, declared to be inconclusive. A long passage, cited on pp. 190, 191, from the Dominican Fishacre, discusses the three views currently held as to the relation between the rational soul and the so-called animal and vegetative souls in man. Dr. Sharp thinks that Pecham held the view that the latter are distinct forms subordinated to the higher rational form, but the fact that Pecham regards them as quasi-material forms which "dispose" or prepare the way for the advent of the rational soul does not imply that they remain after the infusion of the latter. The Thomist also held this. Hence, one would have been glad of further evidence as to what Pecham's theory really was, and as to how he reconciled plurality of forms with that unity of soul on which he insisted so strongly, and this again with that bodily form—*forma corporeitatis*—which Grosseteste had so ingeniously accounted for by his theory of light. It is a pity this latter theory vanished so soon, for modern theory also, according to Jeans, seeks, just as Grosseteste did, to "reduce the whole universe to a world of light, potential or existent." Dr. Sharp has done excellent work in compiling from his various writings the metaphysical theories of Grosseteste, and again in giving us so full an account of the philosophy of Thomas of York, which as yet exists only in inaccessible

manuscripts. Is one right in saying that this Oxford school was experimentalist? It would seem to be very doubtful except in the case of Roger Bacon.

Inevitably, in so vast a work, there are many statements to which one might take exception, and especially do I find this to be the case in the concluding chapter. Amongst the "things" involved in the Aristotelian and Scholastic account of becoming, the final cause should certainly be included. Again, matter surely for Aristotle is entirely passive: it is Augustine, and the Franciscans who ascribe to it activity. Nor does Aristotle in the passages cited on p. 372 refer to "privation as an accident of matter": he says merely that privation is accidental or incidental. Again, though Scholastics certainly teach—as did Aristotle—that the agent must contain at least *in virtute* what they are to produce, I do not think that this doctrine was intended to avoid "any emanational exhaustion of the agent's power during its operation on other beings"; nor can I find either in Grosseteste or Bacon any evidence of such a theory. Plato, too, does not adopt as his three first principles: God, Ideas, and Matter, but God, Ideas, and a certain something which he first calls a receptacle (*ὑποδοχή*), and then identifies with space. Nor is this third factor intractable, but rather indifferent to form. It is true that many philosophers have identified this receptacle with matter, but it is scarce true to say that Plato "came to the conclusion that matter is best called receptivity." Neither is it exact to say that Aristotle in 1029*a* speaks of matter as a substance: he discusses the view of those who maintain this, but only to reject it, his own doctrine being that substance comprises both matter and form. More seriously inaccurate is the statement that "Albert the Great and St. Thomas treated matter as mere receptivity." They do nothing of the kind. They lay no less stress on the potentiality of matter than does the Franciscan school. The difference between the two schools lies firstly in the fact the Thomist conceives matter as something which is potentially extended and will inevitably become extended as soon as it is actualized, whereas the Franciscan school in its early period identifies matter with potentiality of any kind, and so ascribes it to angelic beings, which the Thomist declines to do. Again, the Franciscans—as Dr. Sharpe rightly points out—incline to the view that matter has some sort of reality, and so of knowability apart from form; whereas the Thomist denies this, as he also declines—with Richard of Middleton and with Scotus—to ascribe to matter any sort of activity, however inchoate.

A task of great complexity and enormous detail, requiring no small skill alike in the reading of manuscripts, and in the translating of highly technical terms and phrases, has been successfully accomplished, and it were ungrateful to find fault with occasional ambiguities or what seem to be misinterpretations. Dr. Sharp's work provides the student with a mine of useful information, and withal, abundant references; wherein to my mind lies its chief value, for, if one wonders whether a technical term has been rightly rendered, or a doctrine rightly understood, one is never left in doubt as to where the passage comes from upon which the author's statement has been based. There are also valuable bibliographies and two most useful indices.

LESLIE J. WALKER.

Church, State, and Study. By ERNEST BARKER, Litt.D., D.Lit., LL.D. (London: Methuen & Co. 1930. Pp. vii + 280. Price 10s. 6d.)

It would be misleading if, without explanation, we called *Church, State, and Study* a philosophical book. Most of its problems belong primarily to the

historian. Some of them belong to the theologian, some to the "educationist," some to the lawyer. But the book is philosophical in the sense that its author approaches every problem from the point of view of a man steeped in philosophical conceptions: a man possessed by that unifying vision of the world which is the philosopher's distinctive mark.

In every historical movement of which he treats Professor Barker seeks to trace the thought which it embodies—to show its place in the whole, its relation to what Hegel would call the "self-actualizing Idea," the "Idea which reflects itself in history." Indeed, we may find proof throughout these pages that the influence of Hegel on Professor Barker's thought has been much greater than the casual reader might infer from a first reading of the book. "The vast mass of human volitions, interests, and activities are the means and instruments which the World-Spirit uses to fulfil its purpose." This Hegelian text might have been Professor Barker's motto. Few single books show a wider acquaintance than does this volume with the varied interests of mankind. Few writers know better than its author how to think these varied interests into unity.

Thus, incidentally, the book serves to correct the misapprehension, still not uncommon, that traditional philosophy has dealt always with a world remote from that of everyday life. These essays stand in instructive contrast with another work which appeared almost in the same month, *The Quest for Certainty*, Professor Dewey's Gifford Lectures. "The notion," says Professor Dewey, "that the office of knowledge is to uncover the antecedently real, rather than to gain the kind of understanding which is necessary to deal with practical problems as they arise," "has ruled philosophy ever since the time of the Greeks."[1] Apart from the odd antithesis here implied—for surely a knowledge of what the world (or anything else) *is* is not quite irrelevant in deciding how we are to deal with it—it is strange that a writer of Professor Dewey's ability could present the latter part of his sentence as a statement of fact. Philosophers have no doubt used language that is not understood "outside the schools." It does not follow that no one "outside the schools" is concerned with the problems which those technical terms are intended to elucidate. Indeed, it is only necessary to turn over the pages of the classical writers of philosophy (from Plato downwards, who would have men fix their eyes on the "form of the Good" in order that they may "act wisely in private and public affairs"[2]) to see how untrue it is that philosophy has regarded practical problems as beneath its notice. Professor Barker, who holds that "political theory may be independent of the study of history," who recognizes that there are questions of political theory which are "the same yesterday, to-day, and for ever," that we "have to discuss what the State is *semper et ubique*,"[3] affirms none the less that "political philosophy, no less than other forms, must study the busy hum of affairs in the cave before it can move into the upper light of contemplation."[4] Thus Professor Barker puts into close relation with one another such a mundane matter as the "rate of interest"—which "in the new security" of the Empire "sank to one-third of what it had been under the Republic"—and the "religious feelings" which "supported the institution of the Empire and its continuance." He asserts that the Empire was "more than the solution of a problem—it was a salvation." He finds in the poetry of Virgil and Horace "no adulation, but the expression of a feeling as genuine as that of Tennyson for Victoria and the Victorian Age."[5]

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[1] *The Quest for Certainty*, p. 20.
[2] 517 C.
[3] *Church, State, and Study*, pp. 200–201.
[4] P. 194.
[5] Pp. 14–15.

It is in fact impossible to read this book without being compelled, in the first place, to look at many practical and historical problems in new contexts and with new interest; and, secondly, without acquiring much useful material for the discussion of questions which are philosophical in the narrower sense of that term.

I. In the first essay Professor Barker's conception of history is illustrated by his comments on the change which occurred when "by the end of the third century emperor-worship was passing and the empire was feeling its way towards a new form."[1] "For ten centuries" religion had been an "attribute or dependency of the State." "By the third century . . . the religious motive long spreading westward from its home in the East . . . acquires the dominance." In similar vein Professor Barker remarks that the Sicilians are "good enough philosophers to give the name of the organizing idea" (Mafia) "to the society which it constitutes."[2]

In the essay on Mediæval Civilization the most notable saying, perhaps, is the warning to those "whose wits will persist in going wool-gathering into the Middle Ages to find a comfort which they cannot draw from the golden age of international finance."[3] "An uncritical mediævalism," he tells them, "is the child of ignorance of the Middle Ages." "Sick of vaunting national cultures, we may recur to an age in which they had not been born . . . but we must remember, all the same, that the strength of the Middle Ages was rooted in weakness." "The Middle Ages had not attained a national economy." "A national economy has a higher economic value than a municipal or parochial economy because it means the production of a greater number of utilities at a less cost, and a richer and fuller life of the mind"—a defence at once of Free Trade and of modern culture. There is a truth, no doubt, in the contention of a modern Jesuit that the Middle Ages are not "dark ages" but "bright ages"—days bright with examples of heroism and piety, of artistic and philosophical achievement. To that perpetual clash of rival ideals—of Classicism with Romanticism, Hebraism with Hellenism, Individualism with Socialism, and so forth—which is the distinctive characteristic of modern life, there is in the Middle Ages nothing really similar. The absence of such mental conflicts gave the Middle Ages an ease, spontaneity, and naturalness both in conduct, in thought, and in artistic creation. But this is only one half of the truth. Thus we may give wider application than he himself gives to it to Professor Barker's phrase,[4] "Unity of a sort is easy when there are few factors to be united; it is more difficult, and it is a higher thing, when it is a synthesis of many different elements."

The warning against "uncritical Mediævalism" is the more likely to be taken to heart in the right quarters when it is expressed with the learning, sympathy, and moderation which go with a synthesis as wide as Professor Barker's. His attitude to the Middle Ages may indeed be illustrated indirectly by a remark in which (in a later essay) he brings together two distant epochs—our own and that of Pericles—with both of which the Middle Ages stand in strong contrast. "It is Pericles, and not Bismarck, who is really modern, because it is he who is our nearest spiritual kin." "It is Greece of the fifth century before Christ . . . which is present in the spirit of this age as its analogue and inspiration." "What must primarily be comprehended if we would comprehend ourselves . . . may be what is very far from us in time."[5]

It is thus highly characteristic of Professor Barker's thought that the book gets more and more "thrilling"—no milder word is adequate—as it

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[1] P. 32. [2] P. 163. [3] P. 47.
[4] P. 48. [5] P. 223.

approaches our own times;[1] that Chapters V, VI, and VII—Christianity and Nationality, the "Rule of Law," and the Discredited State—are in some ways the best in the whole series.

II. Of the specifically philosophical problems on which the book throws light one is the problem of Individualism. If, against the familiar thesis that morality is essentially social—that man as a moral being cannot even be conceived apart from the social relations in which moral principles are exhibited—someone had the hardihood to maintain that even the solitary on a desert island (who after long isolation had adopted Solipsism as a serious Creed) might still recognize that it was wrong to wallow in sensual imaginations, and better to husband his resources than to waste them, to bear pain courageously than to bewail it, it would seem that both sides to the dispute might draw material from this book. Professor Barker describes sympathetically the conception of St. Paul, "who held that the Christian Church was a single organic unity—the fulness of him that filleth all in all, fitly joined together and compacted by that which every joint supplieth."[2] Yet it is doubtful whether Professor Barker would affirm—in spite of his recognition of the importance of "the virtues of sympathy as well as of the virtues of solitude"[3]—that apart from social life no rational morality is possible. "Christianity," he says,[4] "did not begin as a Church. Our Lord was a teacher of men." "The positive core of Puritanism[5] was insistence on the individual will, and a cultivation of that solitude in which individual will is tempered and hardened." If right will is the best of all rational functions—if "nothing in the world or even out of it can be regarded as unconditionally good except a Good Will only"—then the very highest moral act is an act of the individual. Dean Rashdall used to argue (in opposition to the saying of St. Thomas[6] that "the perfection of the Universe is what God chiefly intended in the creation of the world"), that a perfect Universe is inconceivable, since however many moral and rational individuals it contains it might always conceivably contain still *more* such individuals, and therefore any conceivable Universe would be capable of improvement. Without agreeing with the Dean that at every conceivable point an addition to the numbers of rational beings must make the Universe better, we may still hold that the organic unity of mankind or the world can only come to its best in its fruition or recognition, and that the Universe is only *recognized* as one by the thought of the Individual. On this theory it is the individual spectators who confer on the world its highest value.

But perhaps Professor Barker's best contribution to philosophic thought is to be found not in single passages which may be quoted but in the book as a whole. Reference has been made already to Hegel's *Philosophy of History*. The educated man of our day is inclined to admit the unity of

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[1] If the age of Pericles is the "analogue" of our own, a similar comparison may be drawn between the age of Cicero and the Eighteenth Century, or again between the Age of Councils and the Reformation. Compared with Plato, the controversial manners of Athanasius and of Luther are barbaric, and about equally barbaric. Civilization is thus remarkably similar just before it enters the darkness of the Middle Ages to what it becomes just as it is emerging from it If we represented its course between Pericles' time and our own by a *descending and reascending curve*, this metaphor would express a truth which is not expressed in Hegel's comparison of the progress of civilization with the ages of man (Greek civilization the "youth," Roman the "manhood," Germanic the rich "maturity" of our race). Yet the metaphor of the curve must not be so used as to allow us to forget that we have, as Christians, something in common, not only with Dante and Aquinas, but also with the earliest Franciscans and the author of the *Golden Legend*, which even Plato and Pericles do not share with us.

[2] P. 133 [3] P. 115. [4] P. 145.

[5] Pp. 114–115. [6] *Summa Theologica*, I. 50. 3.

history. At the same time he doubts here the interpretative value of cold logical categories—One, Many, All (as when the relations of Eastern Despotism, Greek Aristocracy and Democracy, and Germanic Monarchy are explained by reference to the "one," the "some," the "all," who are conscious of freedom under these systems), or again of *Insichseyn* and *Fürsichseyn* (as when Buddhism is defined as the religion of the former). If we ask "How then is the unity of history to be apprehended?" it is natural to answer that a rudimentary apprehension of the unity is already present whenever long periods are seen as a connected story. Whenever we let our minds run rapidly over the events of centuries—whether *e.g.* we do this in the disjointed manner in which the author of the *Golden Legend*[1] gives us the history of Europe from the sixth century to the thirteenth, or in the more connected style in which in *Paradiso* (Canto VI)[2] Justinian recounts the history of Roman rule from Æneas to Charlemagne—our interest in such summary treatment implies a perception of some connecting bond. History has become an Epic. In the words of Professor Freeman, "the whole story, from the beginning to our own time, forms one tale." The analogy of the Epic (if it is not a false analogy) suggests that historical knowledge, if it became complete, would have an *a priori* as well as an *a posteriori* aspect; that while such completeness involves on the one hand the activity of sense and memory enjoying and recording the changing scenes, it must require on the other hand an activity of thought like that of the creative artist. For such thought Greece, Rome, the Middle Ages, the Renaissance, are "pages in the book to show" how by a necessity—analogous to the æsthetic necessity which prescribes to a poem its true development—the self-actuating Idea must reflect itself in history. Is this unity, then, real or imaginary? No one can be quite indifferent to the question, and we can all of us in some measure put it to the test. If a reader begins, say, with such a framework or sketch as Professor Freeman provides in some of his smaller books, does the unity of history become clearer or less clear as he advances in knowledge of the details? The analogy of the Epic suggests (whatever answer we give to the question just asked) that Professor Barker's studies in civilization, ancient, mediæval, and modern, may give us the same kind of assistance to the understanding of human history as good Homeric or Shakesperian criticism affords for the wise reading of Homer or Shakespeare. The method which Professor Barker's historical studies suggest to the philosopher is thus in some respects not quite Hegelian. It is perhaps none the less well fitted to enforce the real lesson of Hegel. Professor Barker gives a timely warning against the thoughtless and unselective accumulation of mere detail which is sometimes covered by the word "research."[3] In the handling of detail he is himself an example to every writer of history. Indeed, it is hard to conceive the student, or even the man of general education, who will not reap a rich reward from the study of Professor Barker's pages.

C. J. Shebbeare.

The Interpretation of Development and Heredity. A Study in Biological Method. By E. S. Russell, O.B.E., D.Sc. (Oxford: The Clarendon Press. 1930. Pp. 312. Price 15s. net.)

Dr. Russell describes his book as a "study in biological method," but it is much more than this. It is a historical summary of the conceptions that have been held with regard to the nature of the process of organic develop-

[1] Under the heading "History of St. Pelagius." [2] *Paradiso*, VI. 34–96. [3] P. 227.

ment, or ontogeny (and it may usefully be supplemented by the reading of a recent book by Professor Cole on *Early Theories of Sexual Generation*, where there is much that is quaint and curious on the matter). Dr. Russell's book is also critical, but constructive too, when he works out his organismal conception of development, and it is a well-balanced and judicial survey of what he calls a major problem in biology.

There have always been two contrasted attitudes with regard to the nature of the process whereby the ovum, or other germinal unit, becomes the fully developed organism. In the past, and at present, many biologists have seen in the ovum, or spermatozoon, something that contained, in miniature, or latent, or potentially, or *involved*, that which *evolved* into the specific animal body. This was the notion of "preformation." Others have believed that in the ontogeny there was something that was not in the germ, that grew up upon the germ. This was the notion of "epigenesis." But since two ova of related species A and B develop into the animals A and B, even though those ova are habitant in precisely the same physical environment, it appears that specifically different reasons inhere in the ova why they become A and B. Therefore there is, if not an actual preformation of the adult structures, at least an involution of those structures. The "external factors" of the environment do not evoke those structures in their specificities. What then is the developmental agency that we appear to be obliged to postulate? In his valuable chapter on the "Misuse of Abstraction" Dr. Russell traces out the growths of the attitudes taken by embryologists with regard to this problem. Workers on the physiological side may study the effect of temperature, of the chemistry of the nutritive medium, of operative interference with the embryo, etc., and it has thus happened that they have extended the notions of their methods to their conceptions of the agency. Therefore we have the physical-chemical hypotheses of development, or, comparing the process with the acquirement and establishment of a habit by an animal, a psychical or mnemic hypothesis has been the result. Or, again, by extending the scope of the morphological method of biology to visible and invisible structural units within the germ-cell nucleus, we have the modern, "particulate" conception that comes from the study of genetics. These are examples of current ontogenetic hypotheses, and of the misuse of the method of abstraction.

Dr. Russell's "organismal" view may be summarized: The ovum about to develop is an organism; the developing embryo is a creature that assimilates and which may be irritable, mobile, predatory, and reproductive—it is all that an organism (in the ordinary sense) may be; it is a functional unity, and this unity is expressed in the activities of maintenance, growth, and reproduction; in it the functional activities are influenced by the past—by the ancestral experience; in it the functional activities cannot be understood (and certainly cannot be described) without reference to the future, or end, of the developmental process; it is not a sum of parts, for the parts must be integrated—just as erroneously should we call a multitude of minute straight lines laid together, end by end, in a certain way, a curve, for that which generates the curve is a mathematical function; the organism endures, in Bergson's sense; it is something dynamic, and not static (as suggested in the "stages" of the embryologist).

The most striking thing about a developmental process is its *tectonic activity*. The embryo assimilates nutritive materials, and may behave as if it had perceptions, and it reproduces cells. But *it assembles those cells* as the specific organ-rudiments, and it differentiates, or shapes, them as tissue-elements—bone-cells, muscle-cells, nerve-cells, etc. This is what particularly

interests us in an embryogeny. What is the assembling agency? We have the clearest and most immediate intuition of its nature in our own minds as artisans, writers, painters, composers, etc. This psycho-biological conception of development has been called "anthropomorphic," and it is suspect by the physiology of our time. Why it should be suspect is a curious study, and that the naïve notions of a "material basis of inheritance," of "carriers of hereditary qualities," or of "organ-forming substances," should still persist and be regarded as orthodox, marks an extraordinary phase in biology.

Over and over again this "anthropomorphic" view of the developmental process has recurred. We find it clearly expressed by Oken (in 1805). The ovum is an entire animal in idea and design only, but not in structure. In it the animal resides as an impalpable spectre, and not as a corporeal miniature. The ovum is related to the animal which it becomes *as the thought is to the word.* A similar view was formulated by Driesch (although Dr. Russell thinks that he spoiled it by the application of the Aristotelian conception of a morphogenetic entelechy). It was the view taken by Samuel Butler and Hering, and (with a physical extension) by Semon. Clearly the notion has persistence, so that biologists have been driven to it again and again in spite of the success of the methods of experimental embryology, and clearly because of the enormous difficulties of purely physical hypotheses. For such physical and chemical notions always include the conception of increasing randomness. If there are chemical physical processes that go on *of themselves,* each successive phase of the process must be represented by an assemblage of parts that is more random than the last one. Only when physical-chemical processes *are coupled* may this law of increasing randomness be reversed; but if there are coupled processes in a developmental career, then it is the coupling agency that has to be explained. In an embryogeny the physical-chemical system assumes, in a regular succession, a series of highly specific configurations, with increase of available energy and entropy decrease, and it is quite conceivable that all this may happen, of itself, at random, and without any coupling agencies that are external to the system. But the improbability of all this is incredibly great. Let us suppose that the stones, bricks, mortar, etc., that are the materials necessary for the construction of a house be dumped, at random, upon the ground where the house is to stand, and suppose that, of themselves, these materials fell together in the form of the house.

The improbability of such a "fortuitous concourse" of materials would be comparable with that of the embryogeny that would occur purely by physico-chemical processes. Such an improbability is incredibly small (it has been found to be of the same order of magnitude as that of all the houses in London catching fire independently of each other, or "by accident," on the same day, or of all the inhabitants of London committing suicide, also independently of each other). Improbable events like these are therefore to be compared with our experience that millions of developmental processes are being completed in every minute fraction of a second. Surely the conclusion is an obvious one—that a developmental process does not occur at random. And, returning to the analogy of a building operation, it is quite conceivable that observers on, say, the moon might be puzzled how to describe the agencies involved in a great building and might not deduce organismal ones. Yet we know that mentality is the assembling agency concerned.

In considering development, most of the other great problems of biology are implied. Heredity simply means that the developmental process by which an ovum became the parent is similar to the process by which the egg borne by the parent becomes the offspring. Modern genetics simply studies minute (and often trivial, or pathological) differences in the developmental process

of the germ-cells reproduced by organisms that conjugate sexually. Evolution means that the developmental process may be a little different in the egg borne by the parent from the process in the egg borne by the offspring. And so on. Wherever biology has speculative interest, and in all those fields where it makes strong appeal to the non-technical reader, the problems of organic development are implied. To such readers Dr. Russell's book will be as a "feast of richness," not only because of its materials, but also from its critical-constructive discussions, and because of its methodological interest. Biology is still a young and naïve science, for the wealth of its data far surpasses that of the physical sciences (or at least of the science that considers only the things that we call inorganic). These data are still woefully incomplete, and while this is so biology may remain largely intuitional in its methods. But books such as this one (and Dr. Woodger's *Biological Principles*) make a good beginning in the construction of a logic of biology. From this point of view alone Dr. Russell's book is strongly to be commended.

JAS. JOHNSTONE.

Creative Mind. By C. SPEARMAN, Ph.D., LL.D., F.R.S. (London: Nisbet & Co., Ltd.; Cambridge: The University Press. 1930. Pp. xii + 153. Price 5s. net.)

This volume is the first of a new series entitled "The Contemporary Library of Psychology," to be published under the editorship of Dr. F. Aveling. The series is described as being planned "with a view to presenting the problems of Psychology in a popular way, but at the same time without any loss of scientific accuracy." If the work under review may be taken as representative of the standard to be maintained, it is evident that the editor and his Advisory Board have a solid respect for the general reader. The popular appeal has not entailed writing down, for while Professor Spearman has done much to make his little book attractive, it is by no means light reading; and being a development rather than a re-statement of his distinctive theories of mental process, it should fulfil the editor's aim in being of service to students and general reader alike. The book is copiously illustrated by reproductions (small but clear) of well-known pictures, and is in all respects admirably produced. The series should meet with a warm welcome.

Professor Spearman brings his noegenetic principles to bear upon the psychological problems presented by creative activity in the arts, in behaviour, and in science and philosophy. The territory surveyed is too extensive to be adequately explored in a book of this size, and it would have been better had the author limited himself to the topics of the earlier chapters in order to develop his thesis more thoroughly. In particular, we could have dispensed with the chapter headed "Behaviour" (though actually dealing with certain tests of reasoning).

The argument is most adequately presented in the chapters on pictorial art. Its outcome is that "the final act in creativity must be assigned to the third noegenetic process; that of displacing a relation from the ideas which were its original fundaments to another idea, and thereby generating the further idea which is correlative to the last named, and which may be entirely novel" (p. 77). The other cognitive principles, quantitative as well as qualitative, together with emotion, though no less essential to the process of artistic creation, are subordinate to that which creates the material of the work of art. We would suggest here that the quantitative principles are the basis of selective criticism of the material provided by the eduction of correlates,

and not in themselves creative. For while the principles of retentivity, which produces "facility for repetition of the same thing" (p. 45), offers an explanation of the satisfaction which the observer finds in repeated details, it cannot well account for the act by which they were produced. It explains *why* the artist painted them, but not *how* he came to repeat just those details just that number of times. In the "Birth of Venus" we notice "the delightful repetitions in the ribs of the shell, in the ripples of the sea, . . . and the folds of the drapery." But there is no proof that Botticelli was under the necessity of painting ripples until the contrary principle of fatigue operated to bring them to an end, so that on another day, when less susceptible to fatigue, he might have given us still more. If we remember that the artist is throughout both creator and critical observer, the sphere of the quantitative principles can be distinguished from that of the more truly creative qualitative ones.

This small book has substantial importance if regarded as a test of the theory stated in "The Nature of Intelligence and the Principles of Cognition." If the validity of the noegenetic principles be accepted, then it may be admitted that the details of a work of art are explicable as instances of correlate eduction; but many will question whether Professor Spearman's argument accounts for the composition as a whole. Quoting the principle that the quantity of mental output must be regarded as constant, he says: "And this first quantitative law of psychology does at once prove to be that of art also; it is that which bids the artist to eliminate everything irrelevant to his aim. . . . For since the total output of energy is obliged to be constant, every expenditure of it irrelevant to the aim must leave so much the less to promote this" (p. 41). But what is this aim, and how is it psychologically determined? To say that the artist aims at the creation of beauty would be inadequate, for the aim is a specific embodiment of beauty. But this initial conception, however fragmentary and schematic, is surely the most significant creative act in the whole process, to which all that follows is subordinate. To demand a psychological analysis of that act is doubtless improper when considering a book of this scope, but any account of the process of artistic creation must take note of that first moment. Possibly this, too, falls under the eductive principles, but we cannot see that Professor Spearman has made it clear. Without this artistic intention there is no determinate direction to the play of eduction. Since any fundament has many correlates of a given category, some selection must be made even before conscious criticism plays a part. By itself eduction might produce a picture, but it is always *this* picture which needs explanation. We can account on these lines for the construction of a composition from an arbitrary starting-point, or for filling in a sketch, but it does not account for the existence of that sketch, nor for the purposeful striving of the artist to achieve his aim.

After the fuller treatment of this section the writer is justified in treating the other arts more summarily, though readers will hope for a more thorough treatment at a later date. Readers of this *Journal* will wish that space had permitted him to develop Chapter XI, where in eight short pages he teases the metaphysician with references to the bucket "in which Kant so cleverly stood and lifted himself up by the handles; the empty hat out of which Hegel handed rabbit after rabbit."

Professor Spearman's book is at once a significant contribution to the study of the more complex mental process and a valuable supplement to his earlier works, while many will find in it an attractive introduction to the more austere argument of *The Nature of Intelligence*.

A. W. Wolters.

Belief Unbound, a Promethean Religion for the Modern World. By WILLIAM POPPERELL MONTAGUE, Professor of Philosophy, Columbia University. (New Haven: Yale University Press; London: Humphrey Milford, Oxford University Press. 1930. Pp. 98. Price $1.50; 7s.)

This volume consists of three lectures, delivered in the Dwight Hanington Terry Foundation, the first of which discusses The Modern Challenge to the Old Religion; the second advocates A Sanctionless Morality; and the third develops the conception of God Finite and God Infinite. Rejecting all Modernism, which seeks to restate Christianity in terms of modern thought, the author demands "a revolutionary recantation of religion and a radical reinterpretation of the supernatural and of its relation to us" (p. 2). He begins the game by loading the dice. Instead of criticizing Christainity at its best, he caricatures it at its worst. It is to be hoped that so unlovely a type is not prevalent in America, and that prejudice has painted the portrait that he gives. "The phases of Christianity that appear most repugnant to the modern temper are, first its methodology of Authoritarianism; second, its ethics of Asceticism and Other-Worldliness; third, its metaphysics of Supernaturalism" (p. 8). As regards the indictment of Christianity, he defines his own position in the words: "As regards the methodological and ethical indictments, we were in accord with the critics and their destructive conclusions; but with the attack on supernaturalism we were in only partial agreement" (pp. 26–27). Rejecting Christianity, the author holds to a kind of theism of his own. This treatment of the Old Religion in this first lecture shows so little philosophical impartiality that he makes it more difficult to approach his own solution without prejudice; but we must try to do so.

The second lecture is distinctly an improvement on the first. He recognizes in man the sentiment of approval of some and disapproval of other actions. As in the conduct of the dog we may detect three motives, *self-interest, sympathy*, and *suggestibility*, so in human conscience; but "it is undoubtedly infinitely more extensive in each of its three aspects than in the brute" (pp. 37–38). Of these three potentialities, "it is not good that the third factor, suggestibility, should be the most important, for it alone is purely provisional, secondary, and instrumental to the other two" (p. 40). For "to replace these causeless or categorical imperatives by hypothetical imperatives, where the feeling of what is right is justified by the knowledge that what is good will ensue, is the primary task for ethical theory, and also the prerequisite for a sound and progressive morality" (p. 42). Nevertheless, "the recognition of the *de facto* conscience must not wait upon its *de jure* authentication, desirable though that may be, for, in the case of duty, *esse est percipi*. It is here that the traditional utilitarians have been wrong, and the intuitionists and rigorists have been right" (p. 43). What then is duty? "Interest in perfecting one's life and the life of others by quickening and intensifying existing potentialities, extending their number and scope, organizing them so that their conflicts will be harmonized, and then mobilizing all the energies of will and intellect to bring them to actuality, and thus add cubits to the stature of our being; that, as I see it, is the whole field of duty" (p. 45). In this egoism and altruism can be harmonized, for the self which takes an interest in other selves, becomes greater in itself. To the question, "Is it not always possible for us to make ourselves over and to change our existing nature and its desires?" (p. 51), he gives an emphatic affirmative answer. Agreeing with James regarding man's spontaneity, he does not "agree with him when he goes on to reduce all voluntary effort to attention. There is a great deal of truth in the ideomotor theory, but it does not explain all conscious action. A prospective act can be at the focus if attention without being willed, and it can be willed without being at the focus of attention" (p. 54). But must

not the prospective act be displaced from the focus of it is not to be willed, and must it not be replaced at the focus by the act which is willed? Is not volition primarily direction of the attention? A consequence of the view of duty here taken is "the Relativity of Good and the Invariance of Virtue" (p. 55). The Good is abundant life. "The ideal of a maximum life emerges as the internal and autonomous absolute that replaces the external and heteronymous standards that we have rejected. Life seeks its own maximum, and the *summum bonum*, or supreme regulative criterion for values, is maximum abundance of life" (p. 57). "Life as thus conceived prescribes its own invariants, two absolute virtues that shine steadily down upon the flux of changing goods. They are invariants because they mark the road of maximum variation. These two virtues are Love and Enthusiasm" (p. 58). While Buddha and Christ are quoted as "the highest earthly exemplars of this ideal of love," the author betrays either his ignorance of the teaching of Jesus, or his prejudice against Christianity, when he adds: "In Buddha one finds the more universal sympathy, extending as it does to brute as well as to human life"; for even if Jesus did not give specific instructions on the treatment of animals, do not His references to God's care for the flowers of the field and the birds of the air, God's knowledge of the fall of every sparrow, the Shepherd's grief at the loss of the one sheep, as an analogy of God's love for every sinner; the lifting of the ox or the ass out of the pit on a Sabbath day, imply that universal sympathy? His advocacy of enthusiasm is carried too far, and expressed recklessly, and his attack on temperance is intemperate. One of the minor evils of Prohibition in America seems to be that philosophers deteriorate morally in depreciating self-restraint as a necessary element in morals. But even this philosopher is not quite consistent, for he concedes that "we should use temperance in our sins and sorrows" (p. 62). The morality here advocated is to be *autonomous*. "It is my thesis that true *morality is without sanction*, for sanctions are external justifications for righteousness and apologies for the good" (p. 63). Accordingly "religion as the foundation of morality should be abandoned, as indeed it is being abandoned" (pp. 64–65). Religion as a sanction external to morality may certainly be abandoned. But if the belief in God as moral perfection, and of the Universe as not against, but with morality gives a wider horizon, a firmer assurance, a larger prospect, a deeper motive, as the Christian moralist contends, can morality be divorced from religion? If in any sense there be God, as the next lecture tries to show, must not morality take Him into account? Is there no duty to Him?

The third lecture offers a substitute for the God of the old religion. From the autonomy of morality some thinkers have concluded that religion is no longer necessary; but not so the author. "It is this yearning for the infinite and the sense of desolation attending the prospect of its frustration that constitutes the motive to seek religion and to make wistful and diligent inquiry as to the possibility of its truth" (p. 67). The problem is this: "How can the amount of evil and purposelessness in the world be compatible with the existence of a God? How can the amount of goodness and purposefulness in the world be compatible with the non-existence of a God?" (p. 68). Dealing with the problem of Evil on the same lines as J. S. Mill, and giving less than two pages to the consideration, the author confidently reaches the conclusion that "there can exist no omnipotent God" (p. 70.) The solution of the Problem of Good is found in a telelogical as opposed to a mechanical interpretation of the Universe. "The kind of causality that we know best, . . . the causality that operates in our lives and minds, is not an alien accident, but an essential ingredient of the world that spawns us" (p. 73). Combining the conclusions of the two arguments, "we are confronted with a God, or something very like

a God, that exists, not as an omnipotent monarch, a giver of laws and punishments, but as an ascending force, a nisus, a thrust toward concentration, organization, and life. This power appears to labour slowly and under difficulties. We can liken it to a yeast that, through the æons, pervades the chaos of matter and slowly leavens it with spirit" (p. 74). The author cannot stop here, however, and is compelled to ask: "Are we then forced to conclude that the finite God, which solved for us the Problem of Good, requires as correlate the infinite God of religious tradition, who seemed to be precluded by the Problem of Evil?" (pp. 74–75). An argument too closely knit to be reproduced in the Relation of Mind and Matter leads to the conclusion that "*the potentiality of being is the sentience of being*, and that as potentiality is ubiquitous and omnipresent, so therefore is consciousness" (p. 82). The author accepts the conception of a cosmic mind, and that mind is personal. For "personality is mind become substantive and autonomous, mind become spirit. If the universe has a mind, that mind would be more rather than less personal than ours, for it would have more rather than less of unity and organicity" (p. 83). As "a person must have an environment," God has the world, "that in God which is not God" as his "internal environment." The relation of "the unitary and personal yet infinite cosmic consciousness" to "the finite God that is the cosmic nisus" is that of "mind to will." "The purpose and value sought by the Great Life is that of the lesser lives within; no fixed *telos* or *end*, but a maximum increase of life itself" (p. 84). The religion corresponding to this new theology must meet "the New Worldliness," humanity sufficient unto itself, satisfied in itself; having no place for and no need of God or heaven. Promethean Religion must take the place of the traditional. This religion will be based on "the two great truths, supremacy of the ideal and the power of free intelligence." It will find the cosmic God, not in Zeus, or Jehovah, but in the spirit of Prometheus, "the Hellenic symbol of what Christians name the Holy Ghost." "Religious experience at its highest and deepest would be the contact which mortal men might have with immortal spirit, the Holy Spirit of God" (p. 91). But even if this is possible, does humanity, self-sufficient and self-satisfied, need it? Many do not feel their need of it at all. At this point one deplorable lapse of taste must be referred to. "There is the story of one who was welcomed to a wedding feast and who turned water into wine, but that story has been put on the Puritan Index, and to refer to it at a Dry dinner would be the height of bad form" (p. 94). This author, however, rather surprises us by a plea for such contact. Man is so constituted that "for better or worse there is associated with this finitude a longing for the infinite. Though finite, man needs the infinite to complete and unify his own being" (p. 95). As there is a chance at least that there is such a cosmic mind, "there is a chance, however small, that a union with the holy spirit of this Promethean God will be attained, and that by such union one's world will be made radiant, and one's life become a high romance" (p. 98). If man in his religion needs this completion, does he not need it in his morality also? To offer a few words of estimate in conclusion. It is only in America, with its disregard of history, its self-confidence, its tendency to exaggeration in either the positive or the negative direction in religion and morals, that such a book could have been written. The author has more knowledge than judgment, more enthusiasm than wisdom, more arrogance than reverence, more cleverness than insight. He is not likely to prove himself "the prophet of a new dispensation," and his Promethean Religion will not displace the older religions by which men have lived.

ALFRED E. GARVIE.

Il misticismo speculativo di Maestro Eckhart nei suoi rapporti storici. By G. DELLA VOLPE. (Bologna: Licinio Cappelli. 1930. Pp. vii + 291. Lire 20.)

Meister Eckhart (1260–1327) is one of those prominent figures whose prominence is not quite secure. For many philosophers he is too religious; for many of the religious he is too rationalistic. The orthodox know him as a proscribed heretic; and those to whom a heretic is a hero cannot be assured that Eckhart's behaviour before his judges was heroic. Some authorities make him the father of German idealism, another strips away all his titles except that of having Germanized and so popularized the terminology of the Scholastic philosophy. Turning from opinions to facts, we are forced to allow him at least historical importance. Tauler and Seuse (Suso), and probably Ruysbroeck as well, proceeded directly from him; the Brethren of the Free Life invoked his name, though not with perfect justification; and Luther, through the anonymous *Theologia Germanica*, which is Eckhartian in doctrine, drew from him some of the most distinctive ideas of his own protestantism. But these facts belong to the history of religious thought: dispute arises when we try to assign to Eckhart his precise place in the history of philosophy. That he has some place in it is indisputable. (1) He certainly passed through the highest philosophical discipline the Schools could offer, and an undoubted philosopher of later date, Nicholas of Cusa, acknowledges debt to him. (2) The student of mediæval thought cannot sharply separate the religious and the philosophical. (3) Mysticism, especially when expounded by someone aware of philosophical exigencies, falls within the sphere of the philosopher's interest. In any case Eckhart appears, as a product and as a factor, in the dissolution of mediæval Scholasticism. How much a product and how much a factor is the question that has not yet been settled.

A new study of Eckhart is consequently to be welcomed. It is to be welcomed for the further reason that recent scholarship has cast serious doubts on the authenticity of many of the works attributed to him. The Latin works stand firm. It is the German sermons and tracts in the unreliable text edited by Pfeiffer (*Deutsche Mystiker des 14 Jahrhunderts*, Vol. II, 1857) that are placed under suspicion—*e.g.* of the 110 sermons and 18 tracts given by Pfeiffer, only about 30 of the former and one of the latter are now generally accepted. Many are at best transcripts given by hearers. Signor della Volpe, without pursuing the question, gives a full bibliography of it on p. 112 (students without Italian may turn to Ueberweg's *Grundriss*, Zweiter Teil, 11 Auflage, pp. 553 and 779), and bases his study on the accepted residuum. From this residuum he gives liberal quotations in footnotes, and thereby supplies his reader with considerable first-hand material. It is extremely useful to have the 28 articles of the Bull of condemnation of 1329 (pp. 106 ff.) The author's interest being historical rather than evaluative, antecedents are emphasized. The first five chapters are devoted to the mystical line that runs from Plotinus through the pseudo-Dionysius to St. Bonaventura. The exposition here has the defect of not being sufficiently subordinated to the main purpose of the book: it becomes an episodic history of mystical philosophies rather than a selection and linking together of so much of the earlier thought as had an extrinsic connection or an intrinsic affinity with the thought of Eckhart.

Four chapters deal with Eckhart himself. They constitute a very careful and well-ordered statement of his ideas. S. della Volpe finds in them an interesting contradiction, interesting because it seems to be necessitated and to a certain extent justifiable. For Eckhart the mystical experience culminates in a union of the creature with the Creator so complete that all distinction between them is cancelled, which amounts to a divinization of

man. (This ideal is either the ground or the corollary of his metaphysical doctrine of immanentism, that God is in all and is all.) And yet, when he treats of ethics, he preaches a doctrine of complete humiliation, of the worthlessness of human values. In calling this a paradox, S. della Volpe names it rightly. But I cannot be sure that he is right in dwelling on it or in regarding it as peculiar to Eckhart. It is *only* a paradox, and something very like it is found in most mystics, even in so rational and sober a mystic as Spinoza. In Eckhart, as in Spinoza, only the All is real: all finitude is, in its finitude, unreal. The finite spirit acquires reality, becomes divine, only when it loses its finitude. A pantheistic metaphysic of this kind, therefore, does not divinize the individual: indeed, it makes such divinization impossible. Consequently, it is compatible with (though not of itself involving) the disparagement of all values that belong to us as finite.

I should hesitate to follow the author's claim that Eckhart was the first really independent mystic of the Middle Ages. His words are: "The mystical ethic of Eckhart is little less than revolutionary; it is the first great assertion of the religious sentiment divested of all externality and affirming itself as pure and absolute internality and as spiritual autonomy. . . . The fundamental difference between him and the mystics who preceded him is that in his wholly concentrated passion for God he did in fact transgress that boundary between God and the creature which the other mystics had upheld, though at times their language seems to go beyond their intentions." To accept at their face-value the extremer statements of Eckhart while discounting the equally extreme statements of other mystics is a procedure that requires explicit defence. That the others escaped condemnation is no proof that they were at heart more orthodox, but perhaps only that they held their heresies with charity, so making them innocuous. If the full tale of ecclesiastical censure were told we might find that it was provoked more by pride, affront, and so on, than by opinions. Bruno broke his monastic vows, and Luther insulted his canonical superior. I am not sure that we know enough about Eckhart's personality to say how much his condemnation was due to his doctrines alone.

But these are minor criticisms. I have a secret sympathy with the author's contention that Eckhart's subsequent influence operated much more on the practical than on the intellectual side of mysticism—from which I should draw the conclusion that he is not so important in the history of philosophy as he is usually represented to be. The "dissolution of scholasticism" is not an isolable dramatic moment precipitated by one or two philosophers, but simply one phase among several of a slow cultural change, in which, as at all periods, each phase was sensitive to the rest, so that its course was determined by them and their conditions as well as by its own antecedents.

T. E. Jessop.

Yoga Philosophy in Relation to Other Systems of Indian Thought. By S. N. Das Gupta, M.A., Ph.D.(Cal.), Ph.D.(Cantab.), I.E.S. (Published by the University of Calcutta. 1930. Pp. x + 360.)

The author is so well known to English readers since the publication of the earlier volumes of his *History of Indian Philosophy*, that he needs no introduction here. He has, moreover, in particular, specialized in both the Sāmkhya and Yoga systems. This is a happy choice because, though European scholars have done something towards the opening up of the Vedānta and Sāmkhya systems to the Occident, yet, as Professor Lanman once said, the

history of Yoga, both as a theoretic system and body of practices, had still to be written. This fact, however, is by no means so strange as he thought. The author has made the subject his own, and besides the present work has published *A Study of Patanjali* in 1920, and a work entitled *Yoga, its Philosophy and Religion*, in 1924. In an estimation of the present book, it is to be remembered that the manuscript was ready several years before the author's *History of Indian Philosophy* was composed.

As the author observes, throughout all the epochs of Indian culture we find the highest reverence paid to the Yogins, who were believed to know the truth beyond the ken of ordinary vision, and also to wield wonderful powers, not only over their own but over other minds, as also over external objects. In the West, too, the most outstanding figures in India are, in the popular judgment, elephants, jewelled Mahārājas, and wonder-working Yogins. "Can you produce a Yogi?" is in the writer's experience a common request of the sight-seeing Western traveller to his English host.

It is true, as Professor Lanman has observed, that little has been said of Yoga practices. This is due to lack of understanding of the subject-matter. The system embodies a code of practices by which it is claimed that the truth taught can be verified. Such verification, it is affirmed, is as veritable as ordinary sense perception. As regards occult powers (*siddhi*), it is only in comparatively recent times that metapsychical phenomena have come to be generally discussed, and in part understood. Even the author, who shows a commendable desire to give a fair and unprejudiced account of the system and to defend it against prejudiced attack, yet says (p. 5) that he has himself kept close to the rational parts of the system, without particularly stressing the experimental portion, because, though some of the phenomena of which Yoga speaks have been verified in some quarters, in modern times, yet other phenomena described in Yoga are, he thinks (to quote his words), "of so mysterious a nature that people are rightly sceptical until they can be verified by the testimony of our own times." Formerly these occult practices were considered unworthy of discussion, and were explained on the grounds of credulity and fraud. But as all systems of Indian philosophy are in unanimous agreement as to the worth of Yoga experience, which, as regards several matters, is receiving some support in the West, the author adopts the standpoint that whilst we should neither uncritically accept the facts of Yoga experience, neither should we unceremoniously dismiss them as being altogether untrustworthy. In any case there is now no ground for timidity in discussing them. The question is one of proof. What is wanted is, to use the language of a recent work (Raul Montandon, *Les Radiations Humaines*), an experimental demonstration of the existence of the subtle bodies of man, such as we find in the work of the late Dr. Gustave Geley, and others.

It will be readily seen that the subject demands more than a linguistic or philosophical endowment, however great. The author himself cites the verse which says that "Yoga is itself the teacher for those who take to Yoga." It is possible, however, to deal, as the author has done in the main, with one side, the theoretic, with, however, an occasional glance towards the occult practices of Yoga. Thus he points out that if the assumption of Yoga is proved, that the individual mind (*Kāryya Buddhi*) is a part of and in contact with a larger psychical whole (*Kārana Buddhi*), it would account for many unexplained facts of abnormal psychology, as also of telepathy and other kindred psychical phenomena. The author says that it is gratifying for an Indian to notice that the controversies of the scientific world have been steadily approaching in a direction which, so far at least as the general scheme is concerned, is familiar to the student of Yoga philosophy. This

statement is the more interesting and authoritative as it is the result of a consideration of his subject from quite an objective standpoint.

As regards historical origins, the author's view is that the systems which now pass by the names of Sāmkhya and Yoga respectively derive from a common stock, the difference being that the atheistic Sāmkhya stresses the theoretic and the Theistic Sāmkhya the practical side of the common teaching. Besides practice in the Patanjali method, Yoga developed on "Tantric" lines as the cult of the physical, both gross and subtle (*Hatha Yoga*), in the form called *Mantra Yoga*, and in the celebrated method which produces the particular ecstasy of *Kundalinī Yoga*. The Professor gives valuable testimony to the strength of these "Tantric" influences, but omits to deal further with the matter because, in his view, these "Tantric" elements "have little philosophic importance" (pp. 50, 51). There may have been some grounds in this case for this manner of dealing with the subject, but in the reviewer's opinion *Sādhanā* and *Yoga* have the philosophic importance of the doctrinal systems of which they are the practical expression. For instance, the *Bhūtashuddhi* rite involves the adoption of the Sānkhyan evolution from the Psycho-physical, Potential, or *Prakriti*, which, however, in the non-dualistic systems is not a Principle of Unconsciousness as in Sānkhya-Yoga, but the power (*Shakti*) of Consciousness (*Chit*) worshipped as the Mother of the Universe.

Chapters II and III are of value. Chapter II should be read with Chapter I, and Chapter III with Chapter IV. The theory of the *Gunas*, or Factors, of *Prakriti* is a very leading part of the system, which may be concisely summarized by saying that *vis-à-vis* the *Purusha* or Consciousness, they state the functions of unconscious *Prakriti* as Presentation of Consciousness, Veiling of Consciousness, and the Activity which makes one or other of the first two functions predominate the one over the other.

Chapter V treats of the theory of Soul, which latter term is not so suitable as the word "Spirit," which the Author sometimes uses, because mind is alien to the nature of the *Purusha* or Spirit as it is in itself. Chapter VI deals with Yoga Cosmology, and Chapter VII with Yoga physics. In Chapter VIII the author well explains the meaning of Sāmkhya Atheism and Yoga Theism. We may here observe that belief in a "Personal God" (to use a current expression) is no part of the common *Dharma* of the Buddhist, Jaina, or Brahmanical systems. There has always been some amount of Atheism in India, but, as the author points out, the Atheism of East and West differ, the latter having not been able to go much beyond materialism, sometimes of a crude kind. Chapter IX deals with the Yoga psychology.

These latter chapters may prove difficult reading for the unversed reader, as the author deals with what he calls "the metaphysical fictions" over which the commentators quarrel. To understand these and other matters it is necessary that the principal doctrines should be set forth in stronger relief from the details accompanying them. Modern Indian writers are too apt to assume that because a matter is clear to them, it must be so to the Western reader. Thus some of these latter consider that to speak of "Unconscious Mind" is a contradiction in terms, though acceptance is now becoming more and more common of the term "unconscious mental process." But neither in Sāmkhya-Yoga nor in Vedānta is there any contradiction, for each of these systems distinguishes between Mind, which, as it is in itself, is Unconscious and Consciousness which illuminates its operations.

The question of freewill and determination is so often neglected that I looked to the Index to see whether the author had anything to say on the matter. The Index is silent, but the author refers to the subject in pp. 318–321.

It is not generally understood that *Vedānta* (leaving aside the Māyāvādin's *Māyā*) is a common-sense philosophy, which, as such, posits an abiding self, a world of change which is, as it appears, man's freewill, and responsibility. There is also no doctrine more widely nor more firmly held in India than the doctrine of *Karma*, which, the author says, "stands as the principle of determinism." He finds a difficulty in reconciling freewill with *Karma*, and appears to hold the opinion that we must make our election for one or the other, though Hinduism holds to both. The question is of such importance that we would have welcomed a more extended treatment of it.

In the event of another edition being printed we would suggest that all the Sanskrit terms and quotations should be translated, and thus make the work more useful by attracting a wider circle of readers.

All that the author has to say on his subject-matter is of both interest and value, coming as it does from one who has made a special study of the Sāmkhya and Yoga systems, and who is well equipped by his general philosophical and Sanskritic knowledge to express an opinion as to what these systems mean.

JOHN WOODROFFE.

John Dewey, the Man and His Philosophy. Addresses Delivered in New York in Celebration of His Seventieth Birthday. (Cambridge, U.S.A.: Harvard University Press. London: Oxford University Press, Humphrey Milford. 1930. Pp. vii + 181. Price, 10s. 6d.)

As the sub-title indicates, this is a composite volume containing addresses delivered by various speakers on a public occasion, apparently printed much as they were delivered. (There is even a section entitled *The Toastmaster's Words*.) Only three of the seven main contributions are directly concerned with Professor Dewey's philosophy; the bulk of the book is devoted to his influence as an educational reformer. It is, however, interesting to learn that his educational theory is a direct consequence of his theory of knowledge, viz., that "knowing" means the same as "'knowing how to do." This doctrine, it seems, has not only revolutionized American education, but has overflowed into China, Mexico, and even Turkey; and we are assured that it will be Europe's turn very soon.

Professor George H. Mead speaks on *The Philosophies of Royce, James, and Dewey in Their American Setting*, and contends that Mr. Dewey has provided us with the first really native American philosophy. (His predecessors had all been " nostalgic" exponents of an alien tradition, from which even James had not fully broken away.) Indeed, we are told that Mr. Dewey has produced nothing less than "the philosophy of American practicality." If this is what he has really done—and it seems not unlikely—it is clearly the duty of all intelligent Europeans to study his doctrines more carefully than has been hitherto usual, at any rate in this country; even if they are false, they must obviously be important. Professor Herbert W. Schneider discusses *The Prospects of Empirical Philosophy*, and appends a pleasing if somewhat lengthy myth about Pan and Logos, and their respective contributions to Mr. Dewey's mental equipment. But it is a pity that he suffers from a sort of persecution-mania with regard to the pre-Deweyan and non-empirical philosophers. We can hardly believe that they were really as stupid and as tyrannical as all that. Mr. James Harvey Robinson's contribution on *John Dewey and Liberal Thought* is somewhat more philosophical and less *kultur-geschichtlich*, but not very novel. He urges us to do away with substances and replace them by events, and to substitute verbs for nouns wherever possible, *e.g.* "minding"

for "mind" (and "mattering" for "matter"?); and promises that if we do many traditional problems will disappear, particularly all those concerned with the relations between minds and physical objects.

The last nine pages of the book contain Professor Dewey's *Response*, which, as we should expect, is both wise and felicitous. It is interesting to find that he at least has his doubts about that "American practicality" of which he is supposed to be the philosophical exponent, and expects that his countrymen will one day get tired of being practical and turn to something else.

H. H. Price.

The Monadology of Leibniz. By Professor H. Wildon Carr. (London: The Favil Press, 1930. Pp. ix + 213. Price 10s. net.)

We have here a commentator who is thoroughly in sympathy with the general philosophical views of the author whom he studies. Professor Wildon Carr has for long devoted his remarkable energies to the defence of a modern monadology, and, though his own views have been also profoundly influenced by modern idealism and recent scientific theories, they seem to owe even more to the influence of Leibniz himself; and he will no doubt succeed in bringing home to many readers Leibniz's striking and well-thought-out conception of the universe as a harmonious system of genuine individuals, and in encouraging them to study him more deeply themselves. The book indeed is not of a very ambitious type. It is rather of the nature of an introduction for students than of an original contribution to scholarship and thought, and as a study of Leibniz could not bear comparison with the work of Professor Latta. Hence a reviewer may perhaps be justified in passing it over rather more briefly than its author's reputation would seem to warrant, especially as from the nature of the case it would be impossible satisfactorily to discuss it without a detailed study of the philosophy of Leibniz, for which space would obviously be inadequate. It is only fair to add that Professor Wildon Carr has also produced a work which claims to give an account of Leibniz's life and philosophy as a whole (*Leibniz*, Benn, 1929).

The present work consists of a brief introduction; a translation of the Monadology, with very copious, though (in view of the condensed character of Leibniz's treatise) not excessive, notes; a translation (without notes) of (*a*) a letter on "The Origin of the Theory of Monads," (*b*) an "Elucidation concerning the Monads," (*c*) "Elucidations of the Reform of the Ontological Argument, the Definition of Matter, the Theory of the Pre-established Harmony, and the Nature of Free-will"; and some short supplementary essays intended to bring out the ultimate value of Leibniz's thought. In a most interesting essay Professor Wildon Carr defends the paradoxical view that there is no *interaction* between monads, but only *intercommunication*, chiefly against the argument that the denial of interaction would lead to solipsism. That his defence will satisfy most readers seems doubtful, and at any rate the disjunctive proposition that a self must *either* be a substance in a sense of the term which implies complete independence, *or* have a merely adjectival existence, on which he bases his whole doctrine, seems to me emphatically neither a necessity of thought nor in accord with the world as we know it. There are also points in the *Monadology* where exception might be taken to the clearness or relevance of his comments, and it may be doubted whether he does not in his interpretation assimilate Leibniz too much to modern idealism. The

translation is good and very readable, but there are a certain number of places where he would have done better to follow the original more carefully.

A. C. EWING.

Studies in the Eighteenth-Century Background of Hume's Empiricism. By MARY SHAW KUYPERS. (The University of Minnesota Press, Minneapolis. 1930. Pp. viii + 134. Price $1.50.)

These Studies deal with a part of the immediate background of Hume's thought, which has suffered neglect through the preoccupation of Hume's critics until recent times with his relation to the English epistemological tradition. The writer accepts the newer attitude to Hume, first set forth by Professor Kemp Smith in his articles on "The Naturalism of Hume."[1] Hume's naturalistic position is regarded as of more importance than the phenomenalism, in which he merely amplifies certain positions reached by Locke and Berkeley; and an attempt is made to interpret his thought as a whole in the light of his confessed enthusiasm for the experimental method. The main purpose of these Studies is to show the relation between Hume's application of this method and certain contemporary tendencies in the fields of thought in which he applied it.

The Studies are divided into two groups. The first group, we are told in the Preface, is "concerned with the historic development which brought the problem of causation to the foreground both in science itself and in the philosophic interpretations placed upon it." The problem of causation is shown to have emerged from the metaphysical interpretations of Newton's empirical, scientific concepts, and in particular from the transformation of forces conceived as methodological principles—the *Vis Inertiæ* and the *Vis Gravitationis*—into forces conceived as metaphysical entities. This historical development is traced with sufficient fullness to make it clear and interesting.

The second group of Studies deals with Hume's empirical treatment of the problems of force or causality, of morals, of politics, and of the interpretation of history. Evidence is brought forward to show his acquaintance with, and interest in, the science of the period and its philosophical interpretations; and his discussions of causality and, incidentally, of mathematics, of space and time, and of primary and secondary qualities, are connected with the problems raised in the development of science. The point that is emphasized throughout is Hume's insistence on the application of empiricism, of Newton's experimental method in contrast to the dogmatic rationalism of his followers and those who expounded him in the interests of theology. When she turns to the social sciences the author is again concerned chiefly with Hume's method, and she rightly insists on the unity which this method gives to his thought on different subjects.

These Studies are successful in making Hume's method stand out "with some of the prominence which he himself attached to it" (p. 89), and in relating it to its background in eighteenth-century thought. It is no part of the author's purpose to give a critical discussion of Hume's right, from the epistemological standpoint, to his enthusiasm for the experimental method, nor to raise the question of the value of naturalism. But studies such as those which she offers are of great help in the understanding of Hume's thought; and that is a matter of interest, even if a consistent naturalism should seem to the reader as unacceptable in its attempted explanations as in its denials.

SHEILA A. KERR.

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[1] In *Mind*, N.S. 14, 1905.

A Philosophy of Reality. By E. L. Young. (Publications of the University of Manchester. No. ccvi. Manchester University Press. 1930. Pp. xi + 266. Price 8s. 6d. net.)

This book, while claiming to set forth a philosophy of reality and accepting the position that the function of philosophy is to explain the universe, dispenses with the stereotyped methods of most philosophies, with what the irreverent are apt to call philosophical jargon, and with all transcendentalism. For this reason it will appeal to those who are interested in philosophy but who are not professional philosophers. The treatment of philosophical problems is fresh and stimulating; there are throughout many fruitful remarks which will repay the trouble of serious reflection; and there is gathered into its pages much interesting scientific material which will prove helpful and suggestive to others.

The whole book breathes the air of a sane, healthy realism, confining itself to "the known and realizable universe and not with anything beyond it." It endeavours to show that the universe is not alien to man and to the human mind. It manifests a confidence in science which apparently requires no critical examination but only an exposition of scientific results. Philosophically, it is in fact an interpretation of reality on the basis of the realism of common sense and of physical science. The author is concerned simply with an exposition of the view to which knowledge seems to him to point, though there are some bogeys, of course, even scientific ones, to be dispatched. Yet, in spite of the generally clear and vigorous style, the critically minded will experience difficulties. The stress laid on movement and vibrations instead of clarifying the problem seems rather to raise one. Terms like *union* ("union is subjectivity"), *integration*, *unification*, require some elucidation. The nature, status, and rôle of mind and consciousness in reality remain far from being clear, and the doctrine that matter and spirit are "the two aspects of reality" is apparently accepted without any critical analysis of its meaning in relation to the other positions maintained in the book.

B. M. Laing.

Pleasure and Instinct. By A. H. B. Allen. (London: Kegan Paul, Trench, Trübner & Co. 1930. Pp. lx + 336. Price 12s. 6d.)

In *Pleasure and Instinct* feelings are shown to be states of the "self" which depend upon the processes of conation. This is an ancient theory, but the author treats it afresh in a clear and convincing manner. Having summarized the chief views upon the nature of pleasure and unpleasure in general, the problem of sensory affective states is considered; and these are explained as due to the satisfaction or frustration of organic cravings. Whether specific to a given sensory organ, or belonging to the organism as a whole (maintainance or enhancement of function, on the one hand, and depression which the organism resists, on the other) these cravings are conative in character; and their mental analogues are the sensory couple, pleasure and unpleasure. The author then turns his attention to the instincts, which he classifies under the main heads of (1) self-maintenance, including also propagation and a number of separate impulses developed as subsidiary to it; (2) the spiritual impulses of "self-maximation" and "self-giving"; (3) fear and anger, as reactions safeguarding the other instincts. Instincts themselves are regarded as the conative trends of life; and pleasure is the mark of the normal development of any one of them towards its goal; while unpleasure characterizes frustration, and is due to the conflict between the persistence of the impulse and its thwarting. Feelings are next compared with and distinguished from sensa-

tions as having a subjective "warmth and value" correlated with success or failure in the satisfaction of conative trends. The view is developed that conscious desire for pleasure is not a primary motive for action. The original is "the emergence into consciousness of a latent craving for some form of activity to which the organism is predisposed." In the exercise of such activity, however, the experience of pleasure may arise; and subsequently, as a value, pleasure may itself become a subsidiary end or motive. This consideration leads to the examination of the question whether there may not be other feelings than pleasure and unpleasure also which may constitute values; and the author suggests that such feelings are to be found in connection with degrees of more or less self-direction of mental activity, as well as with degrees of vividness or intensity with which the self is engaged in its reactions. It will be seen that the thesis is a dynamic and personalistic one, developing from the point of view of affective feeling a line of thought which is receiving increasing emphasis in contemporary psychology, both experimental and theoretic. There is an Index of Authors to whose work reference is made in the volume; but unfortunately a subject-index is lacking.

F. Aveling.

Religion and the Reign of Science. By F. L. Cross, M.A., B.Sc. (London: Longmans, Green & Co. 1930. Pp. ix+111. Price 4s. net.)

Mr. Cross is librarian at Pusey House, and this book is in the Anglican Library of Faith and Thought. Its purpose is to give a brief account of the relation between religion and modern scientific theories. After a chapter on the scientific age in which we live, Mr. Cross goes on to discuss the connection between religion and physics, biology, psychology, Biblical criticism, philosophy, and, finally, religion and the life of the spirit. This is a formidable programme, and no man living could discuss all these topics with equal competence. Mr. Cross's purpose is not technical, of course, but popular, and he has succeeded in providing a very readable book, and though most will enter a demurrer here and there, as a whole his criticisms are justly put.

One cannot understand what is meant by such a statement as this: "The Christian community is not merely the sum-total of all those who . . . have professed the Christian name. It is something more than these, more than its members; it exists apart from them. And if, as it is here contended, the Church exists as a corporate body, then there is no reason why it should not make corporate judgments." What a flock is apart from the sheep is not easy to see. This seems the old fallacy that since man collectively is different from man individually, the crowd is in itself something apart from its members. A few sociologists have tried to maintain this, but not one has been able to say more than Mr. Cross, that it is "something." One yet waits for any further characterization. There is a slight slip on p. 55. It was in 1875 that Wundt went to Leipzig. He founded his laboratory in 1879.

On the other hand, one welcomes the statement that the rather disappointing results that have followed the high expectations of psychology have been due to the following of wrong methods, based on the methods of mathematics and physics and the ignoring of individuality. In the chapter on philosophy the brevity necessarily enforced makes for a little inaccuracy, almost inevitably. It is hardly exact to say, for example, that Whitehead "holds that God and the world stand very much in the relation in which Christianity has explained them by its doctrine of creation," especially as he goes on to say that that doctrine is contained in essence in the first chapter

of Genesis. Genesis scarcely agrees with Whitehead that "It is as true to say that God creates the world as that the world creates God."

Such points as these, however, are incidental to and inseparable from the writing of such a book as this, where a vast area must be covered in a single chapter. One must judge rather by the whole, and so judging, one welcomes Mr. Cross's book as a clear and honest attempt to deal with great issues in a way that will prove helpful and explanatory to the average reader.

E. S. WATERHOUSE.

The Psychology of Clothes. By J. C. FLÜGEL, B.A., D.Sc. (London: Institute of Psycho-Analysis and Hogarth Press. 1930. Pp. 257. Price 21s.)

The modern outlook in psychology finds one of its fullest and happiest expressions in this book. The reader is led away from his prejudices by being shown the admirable qualities and services rendered by the most diverse custom and fashion, and by emulating the detached affectionateness of the author to his subject he can, if he so wishes, make his own approach from a new angle. At the same time, the book omits nothing but the pedantry from the textbooks on this topic. In one sense it is rather frightening to discover how prejudiced and "overclothed" our thoughts are on this subject, and how little we dare think nakedly about the social and sexual problems involved; we are as ashamed of the working of our minds as of the contours of our bodies. Dr. Flügel shows how unnecessary are these shames and modesties without flaunting our weaknesses or swaggering before us as do the reformers. It is clear that he believes in the ultimate control of reason over man's behaviour, but is alive to the fact that mankind is prone to deceive itself, that it is acting reasonably, when, in fact, it is reacting unwittingly against some emotional impulse.

It is impossible in a small space to give an idea of the great range and detailed thinking of this admirable book; a few examples must suffice. The study of individual differences in the mental attitude to clothes leads the author to establish certain types. The *rebellious type* gets little satisfaction from clothes, and is never resigned to them, feels constricted, impeded, and imprisoned. Clothes for these people are never so attractive as nakedness. The *resigned type* has the same general psychological make-up as the rebellious (I have omitted three pages of close description and discussion), except that the habit of wearing clothes is so strong that there is no longer a struggle, but only a wish for the freedom of nakedness. The *unemotional type* is incapable of being pleased or annoyed by clothes or nakedness. In these three types there is little conscious satisfaction in clothes; in those that follow the satisfaction is either in a *reaction* of inhibitory nature against the excitements of clothing or nakedness, or is found in a *sublimation* of impulses of exhibitionism or display. So we have the *prudish type* and the *duty type*, in which latter certain features of costume such as stiffness, tightness, or severity of line have become symbols of work or duty, the kind of clothes being not merely a reaction against self-display, but a brake on any runaway tendencies towards softness or self-indulgence. Where the conscious satisfaction in clothes is more direct, we may have the *protected type*, who are before all things warmly dressed (contrasting with the rebellious type). Next comes the *supported type*, or those who feel pleasurably supported by tight or stiff clothes. In the case of the *sublimated type* there is a fusion of clothes and body into a harmonious unity. Lastly, there is the *self-satisfied type*, which has something in common with the unemotional and the sublimated types, and presents a rather irritating smugness and self-complacency about clothes. This brief outline does not do

justice to the penetrating analysis which each type receives in this book, nor will scrappy quotations show its range. To take one instance more, the author calls our attention to the remarkable change that took place in the decorativeness of men's clothing at the end of the eighteenth century, and shows how it came about that the great social and political upheaval of that period made men drab, but left women gaily dressed. He then goes on to ask how it has been possible for men, who used to look like peacocks and to enjoy their finery, to endure the giving up of display, and further, what has become of the energy that went into dressing. When Dr. Flügel asks a question, he does not shirk difficulties in giving an answer. In another part of the book the fashions of immaturity of figure, of maturity, and the concealment of age are discussed with a truly wonderful fairness and detachment. Most books on this subject are biased somewhere, and one feels that they would be read by naked savages or overdressed courtiers with qualified approval; such readers might, perhaps, have their fancy tickled by the praise or condemnation of some loved or hated foible, but would never be really won over to the author's way of looking at the subject. In this case, however, one feels that the book can be handed to anybody, from Greenland to Patagonia, from Bloomsbury to Mayfair, with the certainty that every private foible or prejudice of the reader has been given its best advocacy, and has been placed in relation to everyone else's foibles and prejudices. Does anyone say he has no prejudices or private fancies about clothes? Let him read this book; he will neither cast the book nor his clothes nor his prejudices aside (it is not propaganda), but will wear his prejudices henceforth with a better grace. JOHN RICKMAN.

Spinoza on God. By JOSEPH RATNER. New York: Henry Holt & Co. 1930. 8vo, pp. xiv + 88. Price $1.50.

This little book is intended as a contribution to the textual analysis, and only indirectly to the philosophical interpretation, of Spinoza's *Ethics*, or rather of a part of it, albeit a very important part of it. Mr. Ratner rightly protests against the tendency to reach Spinoza texts in the light of a pre-conceived interpretation of his whole philosophy. Several years ago the present writer voiced the same protest, and illustrated it by reference to a number of important passages in the *Ethics*.

With regard to Mr. Ratner's main points, let me say at once that I entirely agree with him, in fact I have explicitly and emphatically urged the same views in the commentaries to my translations of Spinoza's *Short Treatise* and his *Correspondence*, the latter of which is referred to by Mr. Ratner. Of these main contentions the first relates to the *substantial* character of the attributes (compare *Short Treatise*, pp. 174 ff.). And intimately connected with this is the second main contention, namely, that the Hegelian, and still too common, interpretation of Spinoza's phrase, *omnis determinatio est negatio* is utterly wrong. It means that the *limitation* or delimitation of finite objects is negation, or an indication of what they are not. But it has no reference to the *characterization of substance* by its *attributes*. (This was pointed out explicitly in the *Correspondence*, p. 431.) Mr. Ratner's emphasis on this view is not only right, but seems especially necessary in America. For I notice to my amazement that in his otherwise excellent book on *Types of Philosophy* Professor W. E. Hocking has repeated this misinterpretation of Spinoza at least four times.

For the rest, without subscribing to everything that Mr. Ratner says in it, one may commend his little book as a helpful contribution to the study of some of the fundamental ideas of Spinoza. A. WOLF.

Rational Induction. An Analysis of the Method of Science and Philosophy. By Homer H. Dubs, Ph.D. (Chicago: the University of Chicago Press. 1930. London: Cambridge University Press. Pp. xv. + 510. Price 21s. net.)

Dr. Dubs is of opinion that while the problem of knowledge has received a great deal of attention from philosophers, the logically prior problem, How do we know when we have attained to knowledge? has never been adequately treated. This problem is the main theme of the volume under review. What is Knowledge, and how is it to be justified? These are the chief questions to be answered. According to Dr. Dubs, knowledge consists of propositions which, if thoroughly understood, together with their proximate and ultimate grounds, will bring about the assent of every unprejudiced mind. Now such knowledge (as distinguished from mere opinion) is established by means of the method of hypothesis and verification. This method is described by Dr. Dubs as "rational induction." Hence the main title of his book.

The volume covers a wide range of subjects, and the chapters sometimes appear to be rather loosely connected. In fact, the author himself kindly suggests to the busy reader that the main points of the book may be grasped by reading four specified chapters out of the fifteen chapters which it contains. Nor does it appear to contain anything strikingly new. One recognizes old friends in its strong points and in its weaknesses. Sometimes they appear more or less disguised in a new nomenclature, but this presents no real difficulty. As a whole the book is comparatively easy and pleasant to read, and the author's fondness of tilting against the foibles of contemporary philosophers adds to the reader's enjoyment. Of course, after reading all that Dr. Dubs has to say about "rational induction" in general, the wise reader will do well to turn to one of the more orthodox accounts of scientific methods and learn also something about the *differences* between the various inductive methods.

A. Wolf.

Psychopathology. By J. S. Nicole, M.R.C.P. & S. (London: Baillière Tindall & Cox. 1930. Pp. xii + 203. Price 10s. 6d.)

This book is divided into two parts, the main text and three appendices. In the main text Dr. Nicole has endeavoured to summarize the teachings of the various authorities on psychotherapy and psychopathology who have influenced psychological medicine during the present century. He starts with an historical introduction, and then he proceeds to discuss the teachings of Morton Prince, Freud, Jung, Adler, Rivers, Watson, Kempf, Berman, and Kretchmer. He discusses the Biochemical researches so popular at present in the laboratories of Mental Hospitals, and ends his résumé by pointing out that in all probability all these different methods of approach have some value for psychopathology, but so far they are not sufficiently correlated to be used as a whole. It is obvious from these summaries that Dr. Nicole has read voraciously, and has himself understood all he has read. It seems a pity, therefore, that he has not given us more of his own conclusions, for the summaries are bare expositions without comment. Further, it is doubtful whether Dr. Nicole has succeeded in presenting the summaries in a way which will be of much use to others. The whole only occupies 100 pages, and so is too brief for the uninstructed, and probably contain nothing outside the knowledge of those already familiar with the subject. We think, however, that this book may be of great use to those who wish to revise and collate their reading for

such an examination as the D.P.M., and the full bibliography at the end of the book will allow such persons readily to fill up any lacunæ they may discover in their knowledge of the subject.

The first appendix is concerned with the various modern concepts of the ego, a difficult but important subject which the author reviews admirably.

In the second appendix the author joins the ranks of those who have attempted to give a short, concise summary of Jung's physiological types, but it is to be doubted if he or any of his fellows have succeeded in making them any clearer to the general reader. Dr. Nicole insists on the importance of understanding these types from the point of view of dealing not only with patients, but also with staff, so that suitable nurses and attendants may be found for individual patients.

In the third appendix the author discusses the Herd instinct, and the exceedingly lax way in which this term has been used in modern psychological literature.

Altogether this book shows great erudition on the part of the author and is pleasantly presented, but in our opinion too much has been attempted in too small a compass. R. G. G.

Contemporary Thought of Germany. By W. Tudor Jones, M.A., D. Phil. (London: Williams & Norgate, Ltd. 1930. Pp. viii + 278. Price 5s. net.)

As Mr. Tudor Jones considers over a hundred philosophers in 276 small pages, detailed treatment is out of the question. But a short book on contemporary German philosophy is clearly required. There are people who wish to be acquainted with the main outlines of German philosophical thought without having to trouble about the details, and for these the absence of detail is a recommendation. They want an account of the main tendencies and an exposition of the leading ideas of the principal thinkers.

The present volume is to be followed by another, and one gathers that the distinction between them is somewhat elastic. The first volume deals with the older men, who made their mark during last century, but it includes many whose chief works have been published during the present century—such as Driesch, Eucken and Husserl, to name but three. The second volume will deal with the younger men. Writers have been grouped to illustrate schools. The problem of distinguishing between schools usually presents difficulties. There are, of course, obvious distinctions, as between Mach and Cohen. But there are usually doubtful distinctions as well—cases where one wonders whether the resemblance or difference between thinkers is the more important. Mr. Tudor Jones has distinguished six groups, which undoubtedly represent six main currents of contemporary German philosophy, and any disagreement with his classification must be slight. It may be remarked that he has neglected the neo-scholastic movement (but perhaps this is reserved for the second volume); that Münsterberg and Rickert should not be classed with the Neo-Kantians, and that the omission of some philosophers for the sake of treating others more fully would have been an improvement, although the inclusion of many names does give the book an added value as a work of reference. But the reader will discover the kind of outlook which distinguishes one group of philosophers from another, and the kind of theory which each philosopher held. He must not expect precise statement. German philosophical writing is often involved and obscure. Mr. Tudor Jones might well maintain that an imprecise rendering now is worth more than a precise

rendering at some hypothetical future date. But he is certainly more successful with some writers than with others—more successful, for example, with Nietzsche than with Husserl.

HELEN KNIGHT.

Grades of Significance. By G. N. M. TYRRELL, B.Sc. (London: Rider & Co. 1931. Pp. 221. Price 7s. 6d. net).

Mr. Tyrrell writes interestingly, simply, and clearly on the nature of personality and of the various aspects of reality with which personality is in touch, with the object of showing that the material world is merely an aspect of reality and not reality itself, and that there are other and wider aspects of which personality may be, and often is, aware. He is clear that our reactions toward so-called facts are very largely conditioned by our philosophical pre-suppositions, and that this is especially the case in regard to psychic research; and his purpose is to put forward a point of view whose presuppositions shall be in accordance with modern scientific and philosophic developments, and which shall enable the facts elicited by psychic research to be put in a proper light.

From his point of view these facts show that personality, which in ordinary life is normally in touch with reality through the facts of the body and the sense-world, is capable of being stretched (the word is his own) so as to get into touch with wider aspects, much in the same way as one can be in touch with a printed book, regarding it merely as a collection of black marks on a white ground, obeying certain laws of relationship, or regarding it as the expression of a meaning, which has nothing to do with black and white, nor even with the laws connecting letters into words. Imagine a race of savants preoccupied with these laws, who had never heard of printed words as expressing meanings, confronted for the first time by someone who claimed that through them he could get into touch with a world of a different order, and you have a situation parallel to that which arises when the materialistically minded person is confronted with the claims made by psychic research.

Mr. Tyrrell is not pleading on behalf of spiritualism "as a religious cult," as he phrases it; he is greatly in sympathy with Dean Inge's fears of the extravagances of belief into which one may be led by substituting for the realm of eternal values a temporal existence stretching out indefinitely. He is aware that evidence for the survival of personality after death is not in itself evidence of immortality, and that the problem of the nature of time is not to be solved in this way. His position in regard to eternal values themselves is indeed very much akin to that of Dean Inge. What he is pleading for is a sober and helpful attitude toward the investigations made by psychic research (which he regards as scientific and not religious), and a recognition of the way in which they point to a widening of the significance of the nature of reality and of the powers of personality. And however we may disagree with particular details of his position, we can only wish him every success in his main object.

L. J. RUSSELL.

Books received also:—

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CORRESPONDENCE

To the Editor of the *Journal of Philosophical Studies*

Dear Sir,

In the January number of *La Critica* Signor Croce takes me to task for a remark I made concerning him in my review of Ugo Spirito's *Idealismo italiano e i suoi critici*, in the *Journal of Philosophical Studies* of July 1930. Since I seem to have misled your readers, I feel obliged to make amends by communicating his strictures: "In a review by Jessop in this excellent philosophical organ . . . emphasis is given to an affirmation and an exhortation attributed to me, namely, that (in *La Critica*) I have reproached the youth of Italy for busying itself with the abstract principles of philosophy instead of applying them in literary criticism, history, etc. This, writes the reviewer, 'is of interest as showing Croce's superb confidence in the finality of his findings, and the authority a teacher can acquire in Italy.' I do not know whether this false interpretation is to be found, though it may well be in the book under review, nor shall I take the trouble to clarify such a trifling detail, since I am now accustomed to see and discount in books, reviews, and journals similar ineptitudes and confusions. But since Jessop has fallen into that misunderstanding, I must explain to him that although I have recommended, and still recommend, in word and still more in deed and example, historical studies as at once a stimulus to and a control of philosophical thinking, I have never dreamed of exhorting anyone to 'application,' that is to mechanical tasks, to thinking without thinking. This in truth would be not so much conceit as stupidity. . . . The advice I have given is the same as that given by Giambattista Vico, when he recommended the young to read the poets, historians, and orators in order to stock the memory and prepare material for judgment, thereby avoiding the danger of becoming subtle, barren, and socially useless. This was the plain meaning of my article on 'Troppa filosofia.' "

I freely accept the correction, and apologize for having uncritically followed Signor Spirito's version of "Troppa filosofia". And perhaps Signor Croce will pardon me more readily if I mention that in translating my expression "superb confidence" by "superba fiducia" he has misinterpreted the adjective. The English "superb" is by no means always a pejorative.

May I take this opportunity of begging Signor Croce to induce a publisher to reissue the English translation of his valuable *Breviario di Estetica*, now out of print?

T. E. Jessop.

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